REPORT RESUMES

ED 003 037 24

THE INFLUENCE OF ACADEMIC AND STUDENT SUBCULTURES IN COLLEGE AND UNIVERSITY ENVIRONMENTS.

BY- PACE, C. ROBERT

CALIFORNIA UNIV., LOS ANGELES

REPORT NUMBER CRP-1083 PUB DATE 64

EDRS PRICE MF-$0.45 HC-$10.76 269P.

DESCRIPTORS- *COLLEGE STUDENTS, *COLLEGE ROLE, *STUDENT CHARACTERISTICS, QUESTIONNAIRES, *STUDENT EVALUATION, STUDENT GROUPING, *INSTITUTIONAL ENVIRONMENT, ENROLLMENT TRENDS, STATISTICAL SURVEYS, STUDENT ATTITUDES, COCURRICULAR ACTIVITIES, COLLEGE CHARACTERISTICS ANALYSIS (CCA), COLLEGE CHARACTERISTICS INDEX (CCI), LOS ANGELES, CALIFORNIA

STUDENTS FROM NINE COLLEGES AND UNIVERSITIES AROUND THE UNITED STATES WERE STUDIED TO DETERMINE THE COMPATIBILITY OF CERTAIN STUDENT INFLUENCES WITH THE PURPOSES OF THE INSTITUTIONS. CORRELATIONAL STUDIES WERE MADE ON 1,319 PARTICIPATING STUDENTS. DATA WERE OBTAINED FROM THE COLLEGE CHARACTERISTICS INDEX (CCI) AND COLLEGE CHARACTERISTICS ANALYSIS (CCA) QUESTIONNAIRES, AND OTHER MEASURES. COMPARISONS WERE MADE TO RELATE THE CHARACTERS OF STUDENTS TO ENVIRONMENT AND SUBCULTURES, ACHIEVEMENT, SELF-CONCEPT, AND COLLEGE SATISFACTION. GENERALIZATIONS FROM THE RESULTS WERE--(1) THERE ARE ACADEMIC SUBGROUPS THAT DIFFER SIGNIFICANTLY FROM THE COLLEGE ENVIRONMENT, (2) THERE ARE SUBGROUPS WHOSE MEMBERS DIFFER FROM THE STUDENT BODY, AND (3) THERE ARE SUBGROUPS THAT DIFFER FROM THE COLLEGE IN THE ATTAINMENT OF EDUCATIONAL GOALS. MOST OF THE EVIDENCE SUPPORTS THE RELATIONSHIP OF COMPATIBILITY AND SUCCESS. (RS)

U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
Office of Education
This document has been reproduced exactly as received from the person or organization originating it. Points of view or opinions stated do not necessarily represent official Office of Education position or policy.

THE INFLUENCE OF ACADEMIC AND STUDENT SUBCULTURES IN COLLEGE AND UNIVERSITY ENVIRONMENTS

Coöperative Research Project No. 1083

by C. Robert Pace

University of California, Los Angeles
Los Angeles, California

1964

The research reported herein was supported by the Coöperative Research Program of the Office of Education, U. S. Department of Health, Education, and Welfare

ED003037

ACKNOWLEDGMENTS

Project 1083 officially began October 1960 at Syracuse University. It was during the previous year, however, in the stimulating environment of the Center for Advanced Study in the Behavioral Sciences, and aided by a small grant from the Social Science Research Council, that the research ideas were developed and the basic measuring instrument for the study of subcultures in colleges and universities was constructed. In this developmental phase, and particularly in the construction of the College Characteristics Analysis, Anne McFee (now Mrs. Robert Singer), then a graduate student in the Psychology Department at Stanford, served as research assistant. For the duration of the project at Syracuse, October 1960 through August 1961, Janice Marsden was employed as a research assistant and, for briefer periods of time, other assistants were Dagney Henderson, Margaret Hazlett, and Barbara Dimpsey. Betty Schwenderman was employed as clerk-typist.

After the project was transferred to UCLA, funds were available to resume work in January 1962. From then until the completion of the study the principal research assistant was Leonard Baird, a graduate student in the Psychology Department. For briefer periods of time, Carl Weinberg, Jack Thomson, and Geraldine Batson (now Mrs. Don Ferguson), graduate students in Education, were also employed as research assistants. Secretarial and typing assistance was provided, at different periods of time, by Melba Kirk, Aileen Benson, Nadine Pressman, and Carol Walker.

The professional skills of Eleanor Roberts, Central Service Bureau, Los Angeles, produced the final typed document.

The talents and interests of all those I have been privileged to employ have contributed much to this project. I am especially indebted to Leonard Baird for vast amounts of data analysis and for substantial help in the preparation of the total report.

C. Robert Pace

UCLA
June 1964.

CONTENTS

"HAPTER PAGE

ACKNOWLEDGMENTS ii

LIST OF TABLES. iv

I. THE IMPORTANCE OF ENVIRONMENT 1

II. THE COLLEGE CHARACTERISTICS INDEX: DEVELOPMENT, EXTENSIONS, AND DEPARTURES 4

III. THE COLLEGE CHARACTERISTICS ANALYSIS: DEVELOPMENT AND DIAGNOSTIC PURPOSES. 9

IV. DATA AND DESIGN FOR THE STUDY OF SUBCULTURES. 20

V. SOME GENERAL CHARACTERISTICS OF NINE COLLEGE ENVIRONMENTS 28

VI. BENNINGTON. 37

VII. SWARTHMORE. 50

VIII. ANTIOCH 66

IX. ST. OLAF. 78

X. DE PAUW 91

XI. EASTERN WASHINGTON. 114

XII. MISSISSIPPI 137

XIII. FLORIDA 159

XIV. SAN JOSE. 181

XV. SUMMARY, CONCLUSIONS, AND SPECULATIONS. 202

APPENDIX

A. THE COLLEGE CHARACTERISTICS ANALYSIS: PRELIMINARY COMMENTS 225
B. COLLEGE CHARACTERISTICS ANALYSIS 238
C. SAMPLE ANSWER SHEET. 248
D. COLLEGE EXPERIENCE QUESTIONNAIRE 249
E. TECHNICAL NOTE 250
F. REFERENCES 254

LIST OF TABLES

TABLE PAGE

V-1 Identifying Information on the Nine Colleges 29

V-2 Summary of CCA Mean Scores for the Nine Colleges 30

V-3 Summary of CCA Average Standard Deviations for the Nine Colleges 32

V-4 Range of Means Across Academic Subgroups Within Each of the Nine Colleges, for Each Subscale of Each Press Dimension 34

V-5 Summary of Total Range of Subgroup Means Within Each of the Nine Colleges, and Between Colleges 35

VI-1 Bennington: CCA Mean Scores for Subgroups and Total College 42

VI-2 Bennington: CCA Standard Deviations for Subgroups and Total College 43

VI-3 Bennington: Differences Between Subgroup Means and Composite Mean on CCA Scales. 44

VI-4 Bennington: Differences Between Subgroup Means and the College Mean on Objectives, Satisfactions, and Grades 45

VI-5 Bennington: Rank Order of Estimated Progress Toward Objectives. 46

VI-6 Bennington: "Sign Test" Analysis of Relationships Between Environment and Attainment in Subgroups . . . 47

VI-7 Bennington: Differences Between Administrative, Academic, and Student Subscores (66%+ Method) 48

VI-8 Bennington: Mean Scores on Aptitude, Personality, and Attitude Tests. 49

VII-1 Swarthmore: CCA Mean Scores for Subgroups and Total College 57

VII-2 Swarthmore: CCA Standard Deviations for Subgroups and Total College 58

VII-3 Swarthmore: Differences Between Subgroup Means and Composite Mean on CCA Scales. 59

TABLE PAGE

VII-3 Swarthmore: Differences Between Subgroups Means and Composite Mean on CCA Scales. 59

VII-4 Swarthmore: Differences Between Subgroup Means and the College Mean on Objectives, Satisfactions, and Grades 60

VII-5 Swarthmore: Rank Order of Estimated Progress Toward Objectives. 61

VII-6 Swarthmore: Analysis of Significant Relationships Between Environment and Attainment. 62

VII-7 Swarthmore: "Sign Test" Analysis of the Relationships Between Environment and Attainment. 63

VII-8 Swarthmore: Differences Between Administrative, Academic, and Student Subscores (66%+ Method) 64

VII-9 Swarthmore: Mean Scores on Aptitude, Personality, and Attitude Tests. 65

VIII-1 Antioch: CCA Mean Scores for Subgroups and Total College 70

VIII-2 Antioch: CCA Standard Deviations for Subgroups and Total College 71

VIII-3 Antioch: Differences Between Subgroup Means and Composite Mean on CCA Scales. 72

VIII-4 Antioch: Differences Between Subgroup Means and the College Mean on Objectives, Satisfactions, and Grades 73

VIII-5 Antioch: Rank Order of Estimated Progress Toward Objectives. 74

VIII-6 Antioch: Analysis of Significant Relationships Between Environment and Attainment. 75

VIII-7 Antioch: "Sign Test" Analysis of the Relationships Between Environment and Attainment. 76

VIII-8 Antioch: Differences Between Administrative, Academic, and Student Subscores (66%+ Method) 77

IX-1 St. Olaf: CCA Mean Scores for Subgroups and Total College 82

TABLE PAGE

IX- 2 St. Olaf: CCA Standard Deviations for Subgroups and Total College 83

IX- 3 St. Olaf: Differences Between Subgroup Means and Composite Mean on CCA Scale 84

IX- 4 St. Olaf: Differences Between Subgroup Means and the College Mean on Objectives, Satisfactions, and Grades 85

IX- 5 St. Olaf: Rank Order of Estimated Progress Toward Objectives. 86

IX- 6 St. Olaf: Analysis of Significant Relationships Between Environment and Attainment. 87

IX- 7 St. Olaf: "Sign Test" Analysis of Relationships Between Environment and Attainment. 89

IX- 8 St. Olaf: Differences Between Administrative, Academic, and Student Subscores (66%+ Method) 90

X- 1 De Pauw: CCA Mean Scores for Subgroups and Total University. 102

X- 2 De Pauw: CCA Standard Deviations for Subgroups and Total University. 103

X- 3 De Pauw: Differences Between Subgroup Means and Composite Mean on CCA Scales. 104

X- 4 De Pauw: Differences Between Subgroup Means and the University Mean on Objectives, Satisfactions, and Grades. 105

X- 5 De Pauw: Rank Order of Estimated Progress Toward Objectives. 106

X- 6 De Pauw: Analysis of Significant Relationships Between Environment and Attainment. 107

X- 7 De Pauw: "Sign Test" Analysis of Relationships Between Environment and Attainment. 108

X- 8 De Pauw: Differences Between Administrative, Academic, and Student Subscores (66%+ Method) 109

X- 9 De Pauw: Mean Scores of Subgroups and Total University on the ACE and the Heston Personal Adjustment Inventory 110

TABLE PAGE

X-10 De Pauw: All Consistent Patterns Between Environment and Attainment and Between Personality and Attainment, Grouped under Environmental Variables. 111

X-11 De Pauw: All Consistent Patterns Between Environment and Attainment and Between Personality and Attainment, Grouped under Personality Variables 113

XI- 1 Eastern Washington: CCA Mean Scores for Subgroups and Total College. 124

XI- 2 Eastern Washington: CCA Standard Deviations for Subgroups and Total College. 125

XI- 3 Eastern Washington: Differences Between Subgroup Means and Composite Mean on CCA Scales 126

XI- 4 Eastern Washington: Differences Between Subgroup Means and the College Mean on Objectives, Satisfactions, and Grades 127

XI- 5 Eastern Washington: Rank Order of Estimated Progress Toward Objectives. 128

XI- 6 Eastern Washington: Analysis of Significant Relationships Between Environment and Attainment 129

XI- 7 Eastern Washington: "Sign Test" Analysis of Relationships Between Environment and Attainment 131

XI- 8 Eastern Washington: Differences Between Administrative, Academic, and Student Subscores (66%+ Method). . . . 132

XI- 9 Eastern Washington: Mean Scores of Subgroups and the Total College on the Allport-Vernon-Lindzey Study of Values. 133

XI-10 Eastern Washington: All Totally Consistent Patterns Between Environment and Attainment and Between Personality and Attainment, Grouped under Environmental Variables. 134

XI-11 Eastern Washington: All Totally Consistent Patterns Between Environment and Attainment and Between Personality and Attainment, Grouped under Personality Variables. 136

TABLE PAGE

XII- 1 Mississippi: CCA Mean Scores for Subgroups and Total University 146

XII- 2 Mississippi: CCA Standard Deviations for Subgroups and Total University 147

XII- 3 Mississippi: Differences Between Subgroup Means and Composite Mean on CCA Scales 148

XII- 4 Mississippi: Differences Between Subgroup Means and the University Mean on Objectives, Satisfactions, and Grades 149

XII- 5 Mississippi: Rank Order of Estimated Progress Toward Objectives 150

XII- 6 Mississippi: Analysis of Significant Relationships Between Environment and Attainment 151

XII- 7 Mississippi: "Sign Test" Analysis of Relationships Between Environment and Attainment 153

XII- 8 Mississippi: Differences Between Administrative, Academic, and Student Subscores (66%+ Method). . . . 154

XII- 9 Mississippi: Mean Scores of Subgroups and the Total University on Personality Scales Derived from the Stern Activities Index 155

XII-10 Mississippi: All Totally Consistent Patterns Between Environment and Attainment and Between Personality and Attainment, Grouped under Environmental Variables. 156

XII-11 Mississippi: All Totally Consistent Patterns Between Environment and Attainment and Between Personality and Attainment, Grouped under Personality Variables. 158

XIII- 1 Florida: CCA Mean Scores for Subgroups and Total University 168

XIII- 2 Florida: CCA Standard Deviations for Subgroups and Total University 169

XIII- 3 Florida: Differences Between Subgroup Means and Composite Mean on CCA Scales 170

XIII- 4 Florida: Differences Between Subgroup Means and the University Mean on Objectives, Satisfactions, and Grades 171

TABLE PAGE

XIII- 5 Florida: Rank Order of Estimated Progress Toward Objectives 172

XIII- 6 Florida: Analysis of Significant Relationships Between Environment and Attainment 173

XIII- 7 Florida: "Sign Test" Analysis of Relationships Between Environment and Attainment 175

XIII- 8 Florida: Differences Between Administrative, Academic, and Student Subscores (66%+ Method). 176

XIII- 9 Florida: Mean Scores of Subgroups and the Total University on the Allport-Vernon-Lindzey Study of Values 177

XIII-10 Florida: All Totally Consistent Patterns Between Environment and Attainment and Between Personality and Attainment, Grouped under Environmental Variables. 178

XIII-11 Florida: All Totally Consistent Patterns Between Environment and Attainment and Between Personality and Attainment, Grouped under Personality Variables. 180

XIV- 1 San Jose: CCA Mean Scores for Subgroups and Total College. 189

XIV- 2 San Jose: CCA Standard Deviations for Subgroups and Total College. 190

XIV- 3 San Jose: Differences Between Subgroup Means and Composite Mean on CCA Scales 191

XIV- 4 San Jose: Differences Between Subgroup Means and the College Mean on Objectives, Satisfactions, and Grades 192

XIV- 5 San Jose: Rank Order of Estimated Progress Toward Objectives 193

XIV- 6 San Jose: Analysis of Significant Relationships Between Environment and Attainment 194

XIV- 7 San Jose: "Sign Test" Analysis of Relationships Between Environment and Attainment 196

XIV- 8 San Jose: Differences Between Administrative, Academic, and Student Subscores (66%+ Method). . . . 197

TABLE PAGE

XIV- 9 San Jose: Mean Scores of Subgroups and the Total College on Selected Scales of the California Psychological Inventory 198

XIV-10 San Jose: All Totally Consistent Patterns Between Environment and Attainment and Personality and Attainment, Grouped under Environmental Variables . 199

XIV-11 San Jose: All Totally Consistent Patterns Between Environment and Attainment and Personality and Attainment, Grouped under Personality Variables . . 201

XV- 1 Number and Percent of Instances in Which Any Subgroup Differs Significantly from the College Composite on Environment, Personality, and Attainment Scores --All Colleges. 204

XV- 2 Locations of Significant Differences in CCA Scores Between Various Subgroups and the College Composite 205

XV- 3 Location of Significant Differences in Personality Scores Between Various Subgroups and the College Composite 209

XV- 4 Location of Significant Differences in Ratings of Progress Toward Objectives Between Various Subgroups and the College Composite 210

XV- 5 Directional Relationships Between Environment and Attainment and Between Personality and Attainment in All Subgroup Comparisons 213

XV- 6 Significant Relationships Between Environment and Attainment and Between Personality and Attainment in All Subgroup Comparisons 214

XV- 7 Summary of Relationships to Relevant Attainment when Environment and Personality Variables Are Congruent and When They Are Different - For All Subgroups in Five Colleges 216

XV- 8 Summary of Totally Consistent Patterns of Influence on the Criterian Variables of Attainment, Satisfactions, and Grades - Five Colleges. 218

XV- 9 Correlations Between Environmental Press and Progress Toward Relevant Objectives, All Students in All Colleges Combined 221

XV-10 Correlations Between Environmental Press and Satisfactions and Grades, All Students in All Colleges Combined. 222

CHAPTER I

THE IMPORTANCE OF ENVIRONMENT

The sort of environment man lives in shapes his behavior in many ways. In the sweep of history, men who lived by the sea were fishermen, men who lived in the forests were hunters. One might well be a stock broker in San Francisco but not so readily in Srinagar, or work for a savings and loan association in Los Angeles but not in Lagos. A boy in Canada will probably play hockey. In Indiana a boy will probably play basketball.

The psychological processes of learning and socialization and other major adaptive responses are responses to external stimuli, to some feature of the environment. Teachers, textbooks, teaching machines, etc., are external stimuli, aspects of an environment intended to promote learning, to make some kinds of behavior more likely to occur than others; just as, in the larger sense, the presence of hockey rinks or basketball courts or the seas or the forests makes some kinds of behavior more likely to occur than others.

All this may seem to be an exaggerated defense for a view which is obvious; yet there is a contrary view which seems to hold, like Popeye the Sailor, that "I am what I am," regardless of the environment, or the external stimuli. There is some truth to this, in an elementary physiological sense, for all men experience hunger and thirst, need activity and rest, and know fear and anger, in all environments. But at a more complex level of behavior it clearly does make a difference in one's knowledge and interests and attitudes and values if one is born and reared and goes to school in Afghanistan rather than in America. And four years spent at Ouachita Baptist College in Arkansas is clearly not the same, in its impact, as four years spent at Princeton University in New Jersey.

Strictly at the level of higher education, the general validity of the proposition that environments influence behavior has been demonstrated many times in past educational research.

The study of students in 43 Pennsylvania colleges by Learned and Wood (1938) long ago demonstrated clearly that students do better in good company. Students who went to colleges where the average ability was high performed significantly better on comprehensive tests of achievement than did students of the same initial ability who went to colleges where the average ability was low.

In the Bennington study, the large changes in students' attitudes toward social-political-economic issues found by Newcomb (1943) were associated with the prevailing climate of opinion in the compact Bennington college environment.

In Minnesota's General College, where pressures on students to be interested in current affairs came from many aspects of the total program, Eckert (1943) found that students' achievement on the Current Affairs Test was close to the 70th percentile of national sophomore norms for the test, despite the fact that General College students were only at the 35th percentile of Junior College norms on measured college aptitude.

Dressel and Mayhew (1954) found that a pattern of characteristics related to general education programs differentiated between four colleges whose students gained most on tests of critical thinking and attitudes and four colleges whose students gained least.

In recent studies at the National Merit Scholarship Corporation, using the College Characteristics Index and also a modified group of environmental press scales, Thistlethwaite (1959) demonstrated that the college environment was an important determinant of students' motivation to seek advanced intellectual training. Moreover, the ethos of colleges high in natural science productivity was distinct from that of colleges excelling in the production of potential doctorates in humanities and social sciences.

Plant (1963) has reviewed many studies of changes in attitudes among college students, and concluded that college does influence such changes. This conclusion conflicts with that drawn by Jacob (1956) in his book Changing Values in College.

Perhaps one of the factors leading to different judgments about this literature has been the attempt to locate rather specifically the cause of the change or lack of change. Jacob was interested in assessing the impact of social studies courses and social studies teachers; but the shaping of attitudes and values and philosophies is not the exclusive domain of the social studies. There has been a long history in educational research of trying to find large significance in small phenomena. When only small pieces of an environment have been studied--such as whether students are in large classes or small classes, have a survey course or a conventional one, take tests every week or only twice a term--the consequences for behavior have typically been insignificant or inconclusive. And hence the conclusions from such studies differ from those found by Learned and Wood, Newcomb, Eckert, Dressel and Mayhew, and others, where large segments of the environment, or the total environment, have been considered.

The present state of research on the impact of higher education is perhaps comparable to the state of physiological research 35 years ago when Lashley (1929) proposed his theory of "mass action" to account for decrements in performance which were roughly proportional to the damaged mass of the cerebral cortex. Perhaps 35 years from now one may be able to pinpoint specific consequences from specific environmental stimuli within the total context of a four-year college education; but for the present, something comparable to the notion of "mass action" appears to be a more profitable concept than to continue searching for large responses from little stimuli. Efforts to exemplify this concept in measuring instruments for characterizing the college environment as a whole and the environment of main subcultures within complex environments are described in the next two chapters.

CHAPTER II

THE COLLEGE CHARACTERISTICS INDEX: DEVELOPMENT, EXTENSIONS, AND DEPARTURES

The approach to measuring environmental press of colleges and universities, initially reported by Pace and Stern (1958a, 1958b), has had widespread application, and various extensions and modifications in the subsequent six years. An account of these developments is the subject of this chapter. Its intent is to place the present research report in perspective, indicating the origins of the present inquiry and its general position in a sequence of related events.

The concept of environmental press was described in 1938 by the psychologist, Henry Murray (1938). Individuals were seen as having characteristic needs, and the strength and relationships of these needs was what characterized the personality. In corollary fashion, the environment was seen as having potentials for satisfying or frustrating these needs, and these potentials were called environmental press. The model for studying behavior was the interaction between personality needs and environmental press. Stern, Stein, and Bloom (1956) elaborated this need-press concept by applying it to assessment studies and showing that the prediction of performance was improved as one defined the psychological demands (press) of the situation in which the performance was to occur. For example, a person with a high need for order would presumably experience satisfaction and perform well in an orderly environment, but would experience frustration and perform poorly in a disorderly environment.

In educational evaluation and measurement the concept of effectiveness has been a central one. The effective examination is one which discriminates between the performances of different students. The effective program is one which attains its objectives. Early in the history of research on education curricula, Haggerty (1937) defined the effective curriculum as follows: "The curriculum that is received by a student, understood by him, and organized into his mental life with some degree of permanence is the effective curriculum of any school, no matter what is printed in courses of study, written into textbooks, listed in bibliographies, or spoken by instructors in lectures and recitations." Paraphrasing this operational concept to refer to the college environment, one might say the environment that is perceived by the students and organized into their consciousness with some unanimity of impression is the effective environment of any school, no matter what is printed in college catalogues, written into objectives, or claimed by faculty members and administrators.

The construction of the first College Characteristics Index, or CCI, by Pace and Stern (1957), represented a blending of these two concepts with an interest in the prediction of students' performance in college. At the time, the writer was serving as a member of the Research and Development Committee of the College Entrance Examination Board and was impressed anew by the fact that personality measures, added to the usual information from high school grades and Scholastic Aptitude Test scores, contributed little improvement to the prediction of college performance. This result, however, might be due in part to the limited nature of the customary criterion of college performance, freshman grade-point average. A grade-point average is obviously not an adequate symbol of all the objectives of higher education; and moreover, the student, in adjusting to college life and demands, is confronted by the environment as a whole. In developing the College Characteristics Index, the intent was to expand the criterion by trying to describe the total atmosphere with which the student must somehow come to terms. Thus, judgments about what might be environmental press counterparts to various personality needs determined the type of items written for the CCI; and judgments about the scope of college life and the educational relevance and importance of various campus conditions and events determined the content of items written for the CCI.

The CCI consisted of 300 statements about college life. The items are answered by college students--TRUE if they think that the statement is generally characteristic of their college, is something which exists, occurs or might occur, is the way people tend to feel or act; and FALSE if they think the statement is not characteristic of their college. The statements referred to curriculum, teaching and classroom activities, rules and policies, student organizations and behavior and interests, features of the campus, and other aspects of college life. The items were organized into 30 scales of ten items each, these being presumed environmental press counterparts to 30 similarly titled personality needs as described in Stern's (1956) personality test, called the Activities Index, or AI.

The first version of the CCI was tried out in five colleges. A second version was tried out in 22 colleges. By the summer of 1959 results were available from about 50 colleges; and from this number a tentative norm group of 32 colleges was used as a base for developing standard scores for the 30 CCI scales. These norms have been used, until recently, as the reference point for interpreting CCI scores.

Over the past several years various extensions, modifications, and reappraisals of the CCI have been made.

Stern (1963), for example, has recently presented a new system for scoring both the CCI and the AI. This is based on the analysis of replies by the same students to both the AI and the CCI, the students being drawn from an assortment of 23 colleges where both tests had been given. As applied to the CCI, the scores and norms reflect students' perceptions of colleges in general, that is, they indicate how students' replies to CCI items are grouped together into factors when the identification of the particular college to which a student's reply refers is unspecified. Earlier, during the academic year 1959-60, Stern and other collaborators published a High School Characteristics Index and an Evening College Characteristics Index. Both of these instruments follow the CCI model literally, consisting of 30 press scales of ten items each. Items originally composed for the CCI which were judged to be appropriate to evening colleges or to high schools were used verbatim in the new instruments, other items from the CCI were modified to fit the situation, and new items of a similar type were composed.

Thistlethwaite (1959), at the National Merit Scholarship Corporation, obtained CCI responses from Merit Scholars and Certificate of Merit winners at various universities. He then identified two criterion groups of institutions--those which had been highly productive in having many of their graduates continue on to the doctorate level, and those which had not been highly productive in this respect. Differences in talent supply were partialled out. He then identified CCI items which were most effective in discriminating between high productive and low productive schools. In addition, he noted that many CCI items referred to student activities and characteristics and many others referred to faculty activities and characteristics, and that both of these types of items were mixed together in most of the CCI scales. He felt that a more diagnostic instrument, in which these two sources of press were measured separately, would be desirable, so he developed a set of student press scales and a set of faculty press scales, constructing new items for these purposes as well as borrowing suitable ones from the CCI. This double set of scales has been used in several studies conducted by the National Merit Scholarship Corporation. These press scales, used by National Merit, were focused on a specialized aspect of the college environment--namely, on conditions associated with scholarly productivity--rather than on the institution as a whole. Although the word press was used to describe these environmental features, there was no corresponding set of personality needs to which they were presumably parallel, and hence the structure of the instrument was no longer explicitly a need-press structure.

A similar departure from the initial need-press parallelism assumed in the AI-CCI has characterized all the research by the present writer for the past five years. A correlation table, showing the interrelationships among the press variables, based on an equal number of respondents from 17 of the 22 colleges which had used the second edition of the CCI in the spring of 1958, indicated quite clearly that the major clusters of CCI variables were different in many respects from the major clusters of personality need variables which Stern had found among respondents to the Activities Index. Subsequent correlational studies of the current CCI by the writer (1960, 1963) and, most definitively, by Saunders (1962) have further demonstrated the lack of parallelism between many of the specific AI-CCI need-press scales. Consequently, the writer's studies of college environments have all been concerned with describing environments in their own right. The basic interest has simply been to identify the major dimensions along which environments differed from one another.

This interest has been reflected in the writer's strategy for analyzing the CCI, using the mean scores of colleges as the unit of analysis, rather than the replies of individuals undifferentiated as to which school they are describing, as Stern has done. A major result of the writer's (1962) studies has been the publication of College and University Environment Scales, or CUES. This consists of items drawn from the CCI, but organized around a set of dimensions which have little resemblance to the initial CCI scales. The dimensions are those along which environments differ from one another, and the items are those which most sharply define these differences between colleges. The items cluster together primarily because of their educational content, and they are no longer press counterparts to any correspondingly labelled psychological variables from the Activities Index. A technical manual prepared by the writer (1963) for CUES, and published by Educational Testing Service, describes its construction, logic, norms, etc. In the writer's research, CUES has now replaced the CCI.

Another departure from the CCI model is the writer's development of the College Characteristics Analysis (CCA), which is the measure specifically used in this Office of Education sponsored research. Although the items in the CCI dealt intentionally with a wide range of educational content, there were no explicit content categories set up at the time items were being written which assured systematic coverage. In 1959-60 the writer developed an explicit list of content categories, stemming mainly from a consideration of institutional characteristics commonly assessed in accreditation reviews and college self-studies (but not including characteristics likely to be outside the knowledge and experience of students, such as investment policies, accounting procedures, faculty government, salary schedules, etc.). These content categories are shown below, together with an estimate (agreement between two judges) of the distribution of CCI items into these categories.

Content Categories	Percent of CCI items in each category	
Administrative		
rules and procedures	6	24%
facilities	4	
special features	14	
Academic		
faculty	8	27%
curriculum	6	
instruction	13	
Student		
student characteristics	24	45%
extracurricular programs	9	
informal student activities	12	
(Unclassified)	(4)	
	100	

Although the content of CCI items was spread over all the categories, it was clear that there was no systematic balance among them. The largest category, student characteristics, had nearly twice as many items as the next largest category and six times as many items as the least represented category. By introducing this content classification into the test blue print for developing the CCA, an instrument was produced in which each area of educational content was equally represented. This content classification is related to another major feature of the CCA, namely, its focus on describing major subcultures, both academic and student, within complex university environments. The CCI is addressed to the environment as a whole. In many universities, however, there are major academic subcultures which differ greatly from one another. In the CCA, the students are asked to characterize that part of the university which they presumably know best--their major academic field or division, and their particular circle of student friends--rather than to characterize the total environment. The instrument as a whole will be described more fully in the next chapter. At this point it is sufficient to note that the CCA, like the student and faculty press scales developed at the National Merit Scholarship Corporation, and like the writer's new scales (CUES), represents another departure from the initial conception of the CCI. The notion of need-press parallelism has not been involved in the development of any of these instruments.

There have thus been two main lines of extension and differentiation since the introduction of the CCI. One has been the extension of the CCI model to other environments, and the revision of earlier scoring procedures. The other has been the differentiation of instruments which depart from the original CCI model. Both of these developments may be regarded as evidence of interest in and of the potential importance of continuing exploration of systematic ways to describe college environments.

CHAPTER III

THE COLLEGE CHARACTERISTICS ANALYSIS: DEVELOPMENT AND DIAGNOSTIC PURPOSES

In a complex college or university there are many environments. The environment of the sociology department is different from the environment of the chemistry department, for example; and so in other academic fields or groupings there are differences--between engineering, education, home economics, business, liberal arts, etc. Although each major division or department is part of the total university environment, and shares some characteristics in common with the totality, each also possesses some distinctiveness. The student in a complex college or university is aware of and responds to various characteristics of the total environment in which he lives. Often, however, he may be more clearly aware of and more strongly influenced by the characteristics of the particular parts of the total environment with which he most closely identifies--his major field or division, and his student friends, rather than the academic program in general or the students in general. It was an interest in attempting to differentiate the impact of these major subcultures which led to the development of the College Characteristics Analysis.

The CCI, it has been noted, was designed to characterize the environment as a whole. Before one could decide whether a diagnostic measure, such as the CCA, was needed, the CCI itself was examined in some detail so as to judge its possible utility in differentiating among subcultures.

Although the CCI had not been used directly to study peer groups or other subcultures within the total environment of a college, there were data from the CCI which suggested the existence and probable location of divergent subcultures in many colleges, and which pointed up the importance of studying the role of subcultures more systematically.

One important line of evidence came from examining the variance of scores. The average score on each scale or cluster of scales is used to describe the college, and to compare differences between colleges. When most observers agree in their responses to the items in scale, the distribution of their scores will be closely grouped around the average. When many observers disagree in their responses to the items in a scale, their scores will be widely dispersed around the average. These variances on the different scales and in the different colleges ranged from a low of approximately .50 to a high of approximately 7.50, with 3.00 being an approximate median value. To facilitate analysis, two arbitrary definitions were made: a variance of smaller than 2.00 was defined as indicating a high level of agreement among observers, and a variance of

4.00 or larger was defined as indicating substantial disagreement among observers. Each scale, it will be recalled, was a ten-point scale. Thus, in standard deviation terms, the criteria may be translated as follows: high agreement means that 68 percent of the scores are confined within a range of three points or less; high disagreement means that 68 percent of the scores extend over a range of four points or more.

Twenty schools were selected for study. Six were identified from a factor analysis as being high intellectual schools; five were identified as being high practical schools; and five were identified as being high social or group-welfare oriented schools. Four other schools were added because of their relatively large size.

A study of the variance of scores in these schools found that agreement about what is or is not characteristic of a college was clearly related to the size of the college--the smaller the college the higher the agreement.

The rank order correlation between the number of scales having low variances in a school and the smallness of the school was .73. The rank order correlation between the number of scales having large variances in a school and the largeness of the school was .62.

In the 16 colleges selected because they exhibited a characteristic or dominant press of a clearly defined type (high intellectual, high practical, or high social), the median number of scales on which the variance of scores was small (less than 2.00) was nine. In the four colleges selected because they were large and presumably heterogeneous, two had no scales and two had only one scale on which the variance of scores was less than 2.00.

It was also found that the dominant press of a school was perceived with greater unanimity than the press of other variables. This was indicated in two ways. First, among the high intellectual schools, 43 per cent of the variances on the relevant intellectual variables were small, compared with 26 percent of the variances on all other scales. Among the high practical schools, 20 percent of the variances on the relevant practical, status-oriented variables were small, compared with 4 percent of the variances on all other scales. Among the high social schools, 75 percent of the variances on the related social, group-welfare oriented variables were small, compared with 35 percent of the variances on all other scales. Second, one could note the percentage of small variances on certain scales in relation to the total distribution of small variances --an obtained distribution as against an expected or theoretical distribution. The results were as follows:

	Small Variances	
	Expected Percent	Obtained Percent
High intellectual schools on intellectual scales	52	65
High practical schools on practical scales	24	55
High social schools on social scales	17	31

In every instance, the obtained proportions were larger than the expected proportions.

It seemed probable that high variances would occur when there were divergent subcultures. There were bits of evidence for this, some confirmatory and some not. Among the six high intellectual schools there were few large variances. One scale, the press scale for Energy, showed a high variance in three of the schools. In those schools one might suppose that there were subcultures related to that particular press. Among six women's colleges there was one scale which had a high variance in four of the six, the press scale for Science. Again one might suppose that there were science-oriented subcultures in these schools which differed from the predominant humanistic orientation of the general environment.

There were several opportunities to test whether students identified with different major subdivisions of a school had different perceptions of the press of the environment of the school as a whole. This was done by comparing the relative rank order of mean standard scores on the press scales. The results were as follows:

	Rank order correlation
University of Kentucky	
Liberal Arts vs. Education	.91
Liberal Arts vs. Engineering	.91
Education vs. Engineering	.90
Miami University (Ohio)	
Liberal Arts vs. Education	.94
Liberal Arts vs. Business	.87
Education vs. Business	.86
San Jose State College	
Liberal Arts vs. Education	.81
Liberal Arts vs. Engineering	.42
Education vs. Engineering	.60
Heidelberg College	
Liberal Arts vs. Education	.86
Drexel Institute	
Business vs. Engineering	.58

At San Jose there were definite differences between Liberal Arts and Engineering, and between Education and Engineering. The Liberal Arts students saw a lower press on the practical, status-oriented variables than did the students in either Education or Engineering. At Drexel, the Engineering students saw a lower press on the practical, status-oriented variables than did the students in Business. At Kentucky, Miami, and Heidelberg it made little difference what major academic subculture the students were in; the environment as a whole was perceived in the same relative order. Further data on this point came from a study at Syracuse, reported by Stern (1960), where the entire senior class was tested and subdivided into 15 academic subgroups. In 11 of the groups, none of the mean scores on the 30 variables differed from the mean of the total sample by as much as one point.[1] In the most deviant subgroup, Speech and Drama, differences from the total group of more than one point occurred on only three of the 30 scales. As to the relative perception of press, two examples were indicative of the general result; the rank order correlation of mean standard scores between Education and Engineering was .89, and between Business and Liberal Arts majors in humanities and classics was .96. For the most part, students seemed to describe the environment as a whole in very similar fashion regardless of what school or college or major field they happened to be in within the university.

From the above correlational studies it seemed reasonable to conclude that the CCI was not well adapted to identifying subcultures within colleges. From the studies of variability of scores, however, it was evident that wide differences of opinion about the over-all characteristics of a school did exist, particularly in large complex universities. Although the CCI differentiates reliably between the characteristics of total institutions, whether large or small, it works best in colleges where there is a high degree of unanimity among the students about what is characteristic of the environment, and this unanimity is most often found in the smaller, and presumably more homogeneous, institutions. Where such unanimity does not exist, as was shown to be true in larger, more complex environments, an instrument like the CCI, but directed toward smaller and more homogeneous subcultures within the larger environment, would appear to be useful. It was to meet this need that the CCA was constructed.

Two features of the CCA were described in the previous chapter--its structure in terms of administrative, academic, and student aspects of the college environment, and its instructions which direct the students' responses to a specific academic and student segment of the environment, rather than to the environment as a whole. Additionally, various rules, facilities, classroom activities, extracurricular programs, etc., were judged as having, cumulatively, one of four main directions of influence or emphasis: 1) an intellectual, humanistic, esthetic emphasis; 2) a friendly, group-welfare emphasis; 3) an emphasis toward independence and scientism; and 4) a practical, interpersonal status emphasis. These patterns of emphasis were ones which had emerged from a previous factor analysis by the writer (1960) of the 30 environmental press scales in the CCI. In short, the CCA was designed to characterize environments along four broad dimensions (or directions of emphasis) and three broad structural categories (or sources of emphasis).

A copy of the CCA, and a preliminary manual describing its construction, are included in the Appendix of this report.

---

[1] Differences between means of less than one point may be, and sometimes were in this particular analysis, statistically significant; but it is doubtful that such small differences have any practical or educational meaning.

The nature of the instrument is illustrated by the sample items reproduced below. These are arranged according to the structural and directional categories described above. In the complete test each of the four major patterns of emphasis is measured by a set of 45 items, of which 15 refer to the administrative, 15 to the academic, and 15 to the student areas or sources of emphasis. In addition to this basic structure of 180 items, there were 30 more items included for experimental purposes. These added items were not studied, however, as part of the present research project, and no further reference will be made to them.

The instructions for students responding to the test are merely to mark each statement as generally true or generally not true. The students act as reporters, saying what they believe to be true or not true from their observation and experience as inhabitants of the environment. The instructions are further diagnostic in specifying the parts of the college or university to which the students' replies should refer. Thus, for statements related to the academic area, a student's answers refer to the academic part of the college or university with which he identifies--such as Engineering, Business, Education, Sciences, Literature, Social Sciences, Music, etc. For statements related to the student area, his replies refer to the students he knows best or associates with most commonly, and to the extracurricular and informal activities he knows about because he or his friends are or have been involved in them. Statements related to the administrative area are answered with reference to the college or university as a whole. The general idea in back of these diagnostic instructions is that a student is probably more clearly aware of and more strongly influenced by the characteristics of the particular parts of the total environment with which he most closely identifies--his major field or division, and his student friends--than by the academic program in general or the students in general. With these diagnostic instructions, the instrument provides a way of estimating the characteristics of subcultures--academic and student--so that differences between subcultures can be compared. For example, how different are the various academic subcultures from one another? Is the emphasis from administrative characteristics consistent with the emphasis from academic characteristics? Is the student community supportive of or at odds with the emphasis in the academic community? In summary, the design and intent of the test are aimed toward a diagnostic evaluation of the role of major subcultures in the environment of complex colleges and universities.

One must clearly understand that the test does not purport to describe the college administration or the administrative community as such, or the curriculum or extracurriculum, or the faculty, as such. Items are classified as administrative when they refer to conditions, practices, etc., which exist primarily because of, or probably because of, the actions or decisions or attitudes of administrators. Similarly, items are classified as academic when they refer to conditions, practices, etc., which exist primarily because of, or probably because of, the actions or decisions or attitude of faculty members.

Various studies of the psychometric properties of the CCA have been made. The CCA preliminary manual describes the process of selecting and

ILLUSTRATIVE CCA ITEMS

Direction of Emphasis

Sources of Emphasis	Intellectual, Humanistic, Esthetic	Friendly, Group Welfare	Scientific, Independent	Practical, Status-oriented
Administrative				
rules and protocol	"Students are allowed to help themselves to books in the library stacks"	"The student government has a responsible role in regulating student behavior"	"Students who don't make passing grades are quickly dropped from school"	"Student organizations must get administrative approval to take stand on controversial issues"
facilities	"There is a theater on or near the campus specializing in foreign films"	"Dormitories are nicely arranged for small informal gatherings"	"Laboratory facilities in the natural sciences are excellent"	"Athletic facilities are modern and well equipped"
over-all features	"The school has an excellent reputation for academic freedom"	"The school helps everyone get acquainted"	"Students here are encouraged to be independent and individualistic"	"There is a lot of fanfare and pageantry in many of the college events"
Academic				
faculty	"Many of the professors are actively engaged in writing"	"Many faculty members are active in community work--churches, charities, schools, service clubs, etc."	"Many of the professors are actively engaged in research"	"Faculty members always wear coats and ties on the campus"
curricula	"There are good opportunities for students to study and criticize important works in art, music, and drama"	"Many courses are designed to prepare students for well-informed citizenship"	"Accelerated or honors programs are available for qualified students"	"Many courses stress the concrete and tangible rather than the speculative or abstract"

Illustrative CCA Items (concluded)

Sources of Emphasis	Intellectual, Humanistic, Esthetic	Friendly, Group Welfare	Scientific, Independent	Practical, Status-oriented
Academic (continued)				
instruction	"Class discussions are typically vigorous and intense"	"Students who are having difficulty in a course are encouraged to talk with the professor about it"	"Frequent tests are (not) given in most courses"	"Students almost always wait to be called on before speaking in class"
Student				
student characteristics	"Students set high standards of achievement for themselves"	"Students have a lot of group spirit"	"Many students are planning careers in science"	"Students are more interested in specialization than in general education"
extracurricular programs	"Many students belong to departmental clubs: i.e. French club, Philosophy club, Math club, etc."	"Many upper classmen play an active role in helping new students adjust to campus life"	"Receptions, teas, or formal dances are seldom attended"	"Student elections generate a lot of intense campaigning and strong feeling"
informal activi-	"Many students are attracted to concerts and art exhibits"	"Students often have small parties to celebrate pleasant events"	"Most students (do not) dress and act pretty much alike"	"There is very little studying here over the week ends"

writing items for the CCA, and reports, for the 90 out of 180 items in the CCA which were drawn from the CCI, the discrimination values for these items. All except two of these 90 items had discriminated by at least 20 percentage points between high scoring and low scoring institutions, the median discrimination value being 34 points.

The major clusters, or directions of emphasis, have also been studied previously. These clusters, developed from groupings of CCI scales, were analyzed in a study by Best (1962) which reported correlations between the various cluster scores and other variables, that presumably, were relevant to the validity of the clusters. Out of 44 predicted relationships, 20 were confirmed at a statistically significant level; and of the remainder, all but two were in the predicted direction. Since the clusters in the CCA are basically similar to those tested by Best in the CCI, and indeed include some of the same items, the results obtained in Best's study would presumably also be obtained, with relatively minor differences, on the CCA as well as on the CCI. Further evidence for the likelihood of this comes from a comparison of the profiles of six institutions where both the CCI and the CCA were administered. An estimate of the press of the institution as a whole, toward each of the four major press variables or clusters, is provided directly by the CCI scores. For the CCA, the average or composite of all the subgroups should provide a comparable picture of the total institutional press. It is impossible to present these profiles graphically because there are no standard scores on the CCA based on some reasonably representative group of schools, similar to standard scores on the CCI, and hence one does not have comparable base lines for drawing the two sets of profiles. However, on each of the four press variables, each test ranks the six institutions in a highly comparable way, the rank order correlations being .94, .90, .94, and .77. The six institutions in which both CCA and CCI data were obtained were Antioch, Bennington, De Pauw, Mississippi, San Jose, Swarthmore. Another way to judge the consistency of results from the two instruments is to note, for each institution, whether its scores on the four press clusters are in the same relative order on both measures. In five of the six schools, the relative orders are identical. In one school there was a discrepancy between the third and fourth places in the ranks, the first and second places being identical. It is reasonable to conclude, therefore, that the composite score of subgroups on the CCA provides an over-all profile of the school which is very similar to the CCI profile.

Proper reliability estimates for the CCA scales would require a large sample of institutions in order to estimate how well each scale differentiated between institutions. Since only nine schools were involved in the CCA research, such an estimate is impossible. As a substitute, the replies of 1,345 students from the nine colleges were treated as a composite. Means and sigmas on each of the scales for this composite population were obtained. Reliability estimates, using Kuder-Richardson formula #20, were as follows:

CCA scales	K-R 20 reliability
Intellectual, Humanistic, Esthetic (IHE)	
Administrative, 15 items	.60
Academic, 15 items	.66
Student, 15 items	.77
TOTAL, 45 items	.84
Friendly, Group Welfare (W)	
Administrative, 15 items	.49
Academic, 15 items	.57
Student, 15 items	.62
TOTAL, 45 items	.76
Scientific, Independent (SI)	
Administrative, 15 items	.40
Academic, 15 items	.53
Student, 15 items	.56
TOTAL, 45 items	.70
Practical, Status-orientation (PS)	
Administrative, 15 items	.64
Academic, 15 items	.67
Student, 15 items	.76
TOTAL, 45 items	.87

Another item of information about the psychometric properties of the CCA is also based on the 1,345 student responses from the nine colleges treated as a composite, and shows the intercorrelations of each set of CCA scales. Correlations among the subscales range from the .30s to the .60s, with a median of .47. Correlations between the subscales and the total scales are in the .70s and .80s, with a median of .80. These correlations between part scores and total scores are, of course, spuriously high because of overlapping items. An overlapping of one-third common elements will give a correlation of .58, which is one third of a perfect correlation. The typical obtained correlation of .80 is equal to three fifths of a perfect correlation. In general, one hopes to have subscales which have a moderate correlation with one another and a higher correlation with the total.

INTERCORRELATIONS

IHE Scales

	Ad	Ac	St
Ad			
Ac	.45		
St	.57	.53	
Total	.80	.79	.87

W Scales

	Ad	Ac	St
Ad			
Ac	.42		
St	.51	.41	
Total	.80	.77	.81

SI Scales

	Ad	Ac	St
Ad			
Ac	.24		
St	.32	.34	
Total	.68	.73	.76

PS Scales

	Ad	Ac	St
Ad			
Ac	.63		
St	.69	.64	
Total	.86	.85	.89

In addition to the fact that the CCA consisted of 90 items (out of a total of 180) known to have discriminated clearly between high scoring and low scoring institutions, the difficulty level of these items was also known. By assuming that the new items would be about the same average difficulty, it was possible to predict what the mean scores on the various CCA scales would probably be. These estimates were given in the tentative CCA manual. There are three 15-item subscales in each of the four major press scales. For 10 of these 12 scales, the difference between the estimated mean score and the composite mean scores actually obtained for the nine colleges which used the CCA was less than one point. The average difference was less than .6. For the four total scores, three differed by less than a point; and the average difference was less than .6.

Thus, from the known discriminating power of half the items, from the accurately predicted difficulty level of the items, from the intercorrelations among subscales and between each subscale and the total of which it is a part, and from the K-R reliability estimates, it seems reasonable to judge that the CCA is psychometrically adequate. Moreover, from the fact that the CCA produces an over-all profile of the institution which is very similar to the one produced by the CCI, it also follows that validity data previously reported by Best (1962) for the CCI are similarly applicable to the CCA.

CHAPTER IV

DATA AND DESIGN FOR THE STUDY OF SUBCULTURES

Having developed instruments for characterizing the college environment as a whole, and for characterizing main academic and student subcultures within the larger environment, one can assess the influence of the college and its main subdivisions on the attainments of students.

The major hypotheses for the study are as follows:

1. The press from the academic and student subculture with which the student most closely identifies will be more influential on the student's attainment, satisfaction with college, and sense of progress toward relevant objectives, than the press from the college or university as a whole.

2. The pattern of achievement, satisfaction with college, and sense of progress toward relevant objectives, of similar students in contrasting subcultures will be related to the direction of press in the subculture. The same will be true of contrasting students in similar subcultures.

3. The educational impact of the college or university will be related to the proportion of its students who identify with academic and student subcultures which support the major objectives of the school.

The testing of these hypotheses requires three kinds of information:

1. Information about the college environment, so that differences between colleges, and between main subcultures within colleges, can be identified. This information comes from the College Characteristics Analysis previously described.

2. Information about the students, so that the attainments of similar students in contrasting subcultures, and of contrasting students in similar subcultures, can be estimated. This information comes from students' scores on various measures of academic aptitude and personality characteristics. The available measures differ from one college to another, and not all such measures are available for all students in all colleges. Such data were available, however, for most students in most colleges.

3. Information about students' attainments, so that the characteristics of environments and the characteristics of students can be related to criterion measures of attainment. For this purpose a questionnaire

was printed on the back of the CCA answer sheet. A copy of the questionnaire is included in the Appendix. This questionnaire consists of a list of eleven objectives to which students indicate the degree of progress they feel they have made toward their attainment, a list of extracurricular activities in which students indicate the amount of their participation, three questions dealing with how well satisfied students feel about their college experience, and one question about the grades which students have received. The appropriateness of extracurricular participation as a criterion measure is questionable and was therefore not used as such in the subsequent analyses. The criterion measures, then, consist of grades, satisfaction with college life, and progress toward relevant objectives.

In addition to the main hypotheses described above, many other propositions were tested, and data were analyzed in ways which, hopefully, would throw some light on the dynamics of complex college environments. For example, colleges varying in size and complexity were selected for the study so that these factors could be related to the existence and potential importance of deviant subcultures. Also, within colleges the press scores for administrative, academic, and student aspects of the environment were compared with one another so as to estimate the extent to which different parts of the environment were mutually supportive and to estimate the relative contribution of each to the total press of the college.

Nine colleges and universities provided the data for this research project. Three were invited because they were relatively small in size and presumably would have few if any subcultures which differed markedly from the more general or common environment of the school. These were Bennington, Swarthmore, and Antioch. Four were invited because they were complex, diverse, and relatively large institutions, would presumably have many subcultures which differed markedly from one another, and would thus be places where the importance of subcultures was most evident. These were Eastern Washington State College, the University of Mississippi, the University of Florida, and San Jose State College. Two other schools were selected because they were of moderate size and complexity--De Pauw University and St. Olaf College.

At Bennington College, the interest of President William Fels in the proposed research led to the assistance of his office in obtaining data. The CCA was administered to a cross section of junior girls. Since the CCI had previously been administered to a cross section of juniors, the inclusion of Bennington in the study enabled a comparison to be made of the results from these two instruments. In connection with a follow-up of Bennington students who had been studied 25 years earlier, Dr. Theodore Newcomb had also restudied many of the current Bennington students. Since this included most of those who had taken the CCA, their test scores were obtained from Dr. Newcomb on the following instruments: a Political Liberalism scale, a Radicalism scale, the Remote Associates Test, and parts of the Omnibus Personality Inventory. Scholastic Aptitude Test scores were obtained from the college records.

Antioch, Swarthmore, and St. Olaf are schools which were being studied by Dr. T. R. McConnell and his staff at the Center for the Study of Higher Education at the University of California, Berkeley, and were selected for the present research for that reason. Students' descriptions of the environment from the CCA and CCI would be useful information for McConnell's study; and students' scores on the Omnibus Personality Inventory, obtained from McConnell's study, would be useful for the present research. The CCA was administered at Antioch with assistance from Dr. Ruth Churchill. Data from the CCI were available from a previous year. At Swarthmore, with assistance from Dean William Prentice and Miss Diana Drake, the CCA was administered to a sample of seniors and the CCI was administered to a smaller group of upperclassmen. At St. Olaf, through Mr. P. J. Fjelsted, the CCA was administered. No other data about students were available at St. Olaf; but at Swarthmore many of the students who took the CCA had previously taken the Omnibus Personality Inventory, and College Board scores were also obtained from the school records. At Antioch, many students had taken the OPI, but few of the students who took the CCA matched those who had taken the OPI.

At De Pauw, under arrangements made with Dr. John Wittich and Dr. Robert Exner, the CCI was given to a sample of juniors, and then, a year later, the CCA was given to the same students as seniors. From college records, scores on the ACE and the Heston Personal Adjustment Inventory were obtained.

At Eastern Washington State College, administration of the CCA and of the Allport-Vernon-Lindzey Study of Values to a cross section of upperclassmen was handled by Dr. Robert Smawley. The college also provided, from its records, reports of students' high school grade-point averages.

At the University of Mississippi, the CCA and the Stern Activities Index were administered to a cross section of seniors, and the CCI was administered to a smaller group of seniors. The local arrangements were under the supervision of Dr. John Morris.

Dr. Walter Plant arranged for the administration of the CCA and of five scales from the California Psychological Inventory to students at San Jose State College. Results on the CCI had been obtained on a previous occasion, also with Dr. Plant's help, from San Jose.

At the University of Florida, the CCA and the A-V-L were administered under the direction and assistance of Dr. Ben Barger. Scores on the ACE and/or the SCAT were obtained from college records.

To those who made this collection of data possible, the writer is indebted and appreciative.

The information obtained from each college is shown in the following list:

Antioch	CCI responses, 100 upperclassmen, 1959 CCA responses, 119 upperclassmen, 1961 OPI scores, 17
Bennington	CCI responses, 64 juniors, 1959 CCA responses, 48 juniors, 1961 SAT scores, 41 OPI scores, 38 RAT scores, 27 Political Liberalism scores, 34 Radicalism scores, 37
De Pauw	CCI responses, 169 juniors, 1959 CCA responses, 139 seniors, 1960 ACE scores, 124 Heston scores, 124
Eastern Washington	CCA responses, 121 juniors and seniors, 1962 High school GPA, 88 A-V-L scores, 115
St. Olaf	CCA responses, 98 juniors, 1961
San Jose State	CCI responses, 319 sophomores, juniors, and seniors CCA responses, 320 sophomores, juniors, and seniors, 1961 CPI scores, 289
Swarthmore	CCI responses, 18 upperclassmen, 1961 CCA responses, 91 seniors, 1961 SAT scores, 61 OPI scores, 57
U. Florida	CCA responses, 207 upperclassmen, 1962 A-V-L scores, 205 ACE scores, 74 SCAT scores, 103
U. Mississippi	CCI responses, 63 sophomores, juniors, and seniors, 1961 CCA responses, 250 seniors, 1961 AI responses, 236

Not all CCA responses were used. A few answer sheets were incomplete. Others were omitted because they were from a subgroup which was too small to be analyzed. Approximately 6 percent of the total group was eliminated for these reasons.

The procedure for analyzing the data was the same in all nine colleges. Its main outlines were as follows:

1. Students were classified into appropriate academic subgroups, based on the information recorded on the CCA answer sheets. For the most part, this classification could be made in a routine and straightforward manner. There were a few students whose answer sheets did not contain any information identifying a major academic field, and these cases were eliminated. In some other cases, the identifying information was not entirely clear, and a judgment had to be made about it. For example, a student might say that his major was Social Studies and also that he was in the School of Education. Should he be classified under Education or under Social Studies? Classifications were made at the departmental level--as mathematics, sociology, history, etc.--and also at the divisional or school level in the case of complex universities. The guideline for deciding doubtful classifications was consistent with the purpose of the research--namely, to put people into the most homogeneous group. Sometimes, however, the most homogeneous group contained so few cases that any analysis of it as a group would be unwarranted--for example, three people in Journalism--and in such situations the cases were eliminated, or, if the group, along with other groups too small to be analyzed separately, could be combined into a larger but still presumably homogeneous or closely related cluster, it was so combined. Such combinations were made only when necessary.

2. For each academic subgroup included in the study all twelve of the CCA 15-item scales were scored. Since these scales can also be grouped into four 45-item scales, total scores on these were determined. All scores were punched on IBM cards.

3. Means and standard deviations for all scales in all subgroups were computed together with two composite means, one being the average of the subgroup means and the other being the average of all individuals.

4. The deviation of each subgroup mean from the composite mean, plus or minus, was computed, and t-tests were made to identify all scores of subgroups which differed significantly from the composite.

5. Personality and aptitude test scores, ratings of progress toward objectives, excurricular involvement, ratings of satisfaction with college life, and grades were all also punched on IBM cards and analyzed in the same manner as were the CCA scores. Thus, for every subgroup in every college, one has obtained its mean press scores, the mean scores of its members on progress toward objectives, satisfactions, and grades, and wherever available, the mean scores of its members on various personality measures. In each case these mean scores are compared with the composite mean in the college as a whole, with t-tests to identify significant differences.

6. For each college as a whole, the relative contributions of the administrative, academic, and student subscores to the total scores on each of the four press variables are noted. This permits a judgment to be made about the sources of press within the institution, and thus the extent to which different aspects of the environments are mutually supportive of one another. For example, does the group welfare emphasis of

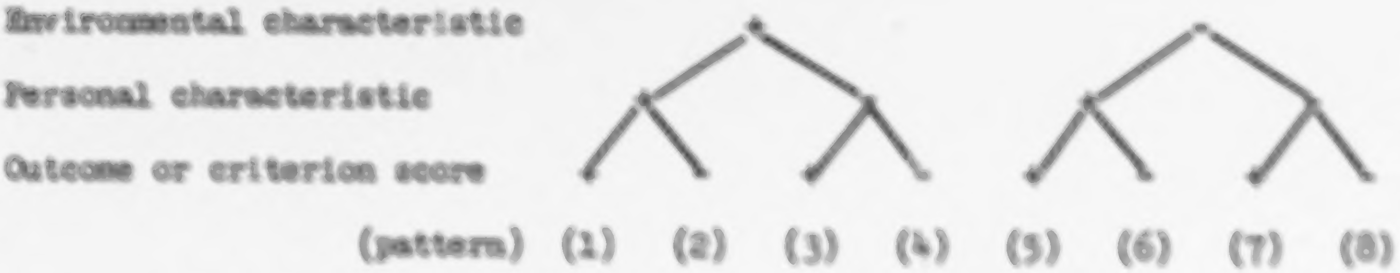
the environment come in more or less equal amounts from administrative, academic, and student "sources," or does it come predominantly from only one of these sources? In these analyses a different method of scoring the CCA was used. It is a method that the writer has developed for scoring CUES (College and University Environment Scales) and is one which follows a public opinion poll rationale. The score on a scale consists of the number of items judged to be characteristic of the college, with characteristic defined as agreement among the reporters by at least a 2-to-1 majority or greater. This is referred to as the "66%+" method of scoring. Thus, only items about which there is a high level of consensus (2 to 1 or greater) are considered to be "characteristic" of the college. On any one of the 15-item subscales, then, an institution's score could range from 0 to 15; and on any of the 45-item scales the score could range from 0 to 45--depending, in each case, upon how many items reached or exceeded the 2-to-1 level of consensus required to be counted as "characteristic" of the institution. Since the various subscales are not of equal difficulty, the obtained differences between them at each college are compared against the typical differences for the nine colleges as a composite.

7. Next, relationships between environment and attainment are presented. Does a subgroup which deviates significantly in its environmental emphasis from the college as a whole also deviate significantly in the estimated progress by its members toward objectives that are relevant to the emphasis of the subgroup? These analyses enable one to judge how often the attainment of certain objectives is associated with membership in certain subcultures, and thus to estimate the impact of subcultures as compared with the impact of the environment as a whole. To make these analyses, decisions had to be made about which objectives are relevant to which environmental emphases. There are, it will be recalled, four main environmental variables and eleven objectives. The judgmental task can be described as follows: if you have to put an objective under one and only one environmental category (IHE, W, SI, or PS), where will you put it? Various judges (research assistants working on the project, and other interested graduate students and faculty colleagues) considered the problem and defended their choices with varying degrees of conviction. No systematic record was kept of these debates; but the ultimate decisions made by the writer reflected, as well as one can recall, the maximum consensus. Some objectives, for example, are surely relevant to more than one of the four main environmental variables: #6 (personal development) and #9 (effective communication) could be regarded as relevant to all four variables and thus were not selected for any specific press. The classifications used in all subsequent analyses are listed below:

Environmental Emphasis	Relevant Objectives
IHE Intellectual, humanistic, esthetic emphasis	1. acquiring a broad cultural and literary education 4. understanding different philosophies and ways of life 10. developing an enjoyment and appreciation of art, music, and literature

	Environmental Emphasis	Relevant Objectives
W	Friendly, group welfare emphasis	5. social development, getting along with others 7. effective citizenship
SI	Scientific, independent emphasis	3. specialization for further professional, scientific, or scholarly work 8. critical thinking 11. understanding science and technology
PS	Practical, status emphasis	2. vocational training

8. And finally, in each college where there are sufficient data, a pattern of relationships between student characteristics, environmental characteristics, and outcome measures has been studied. This analysis will be described in greater detail later. Basically, however, it is a simple "spiderweb" type of successive sorting process which is illustrated below:



Patterns (1) and (8), in contrast to patterns (2) and (7), test the basic need-press type of theory. Suppose the environmental characteristic was press in an intellectual, humanistic, esthetic direction, the personal characteristic was the score on the A-V-L estheticism scale, and the outcome or criterion measure was sense of progress toward an appreciation and enjoyment of art, music, and literature. Students who are in college subgroups which are above average in press toward this value, and who are above average on this characteristic, should be above average in their progress toward the attainment of the relevant objective. This is pattern number (1). Pattern number (8) is the reverse. Both are consistent with the theory. Patterns (2) and (7) are contrary to expectation. Patterns (4) and (5) would be expected if the personality characteristic of the student was more influential than the environmental press of the subgroup. In other words, when personality characteristic and environmental characteristic are opposed, the outcome is in the direction of the environmental characteristic. If, however, the outcome was in the direction of the environmental characteristic instead of the personality characteristic, then patterns (3) and (6) would be obtained. Thus, comparisons of the frequency with which the above eight patterns occur provides answers to the central questions posed in this research inquiry; namely, what happens to similar students in different subcultures, and what happens to different students in similar subcultures?

Except for the CCA data, the information obtained from each college differs somewhat from one college to the next. Consequently, each college is treated as a case study. General conclusions from the consistency of results in the various case studies are presented in the final chapter. Before presenting the nine case studies, however, it may be helpful to present certain general analyses of the nine college environments as a point of reference around which the more specific case studies may be evaluated. This is the topic of the next chapter.

CHAPTER V

SOME GENERAL CHARACTERISTICS OF NINE COLLEGE ENVIRONMENTS

Identifying information about the nine colleges is given in Table V-1. Tables are numbered in sequence within each chapter. Three of the colleges are private, nonsectarian, liberal arts colleges--Antioch, Bennington, and Swarthmore. Two are denominational colleges--De Pauw and St. Olaf. Two are State Colleges--Eastern Washington and San Jose. Two are State Universities--Florida and Mississippi. They vary in size from approximately 300 to 12,000 students. The percent of the students in the CCA sample whose major fields were outside of the liberal arts--i.e., in such fields as Education, Engineering, Business, Nursing, etc.--was used as an estimate of the complexity or heterogeneity of the college environment. Since the selection of students tested in all colleges was determined by at least rough sampling procedures, the percent of the sample outside liberal arts is a reasonable approximation for the college. The size of the sample tested was approximately one half of the size of the senior class in the three smallest colleges, approximately one third the size of the senior class in the three middle-sized colleges and in one of the larger universities, and 10 percent to 15 percent in the two largest institutions.

The number of academic subgroups in each college, and the percent of the CCA sample outside of liberal arts, are functions of the CCA sample. In most colleges there were more potential subgroups than the ones listed, but the number of cases obtained was too small to make an analysis of these feasible. In Swarthmore, for example, there is a small Engineering subgroup; but since only four persons from this group happened to be tested it was not studied and Swarthmore is listed as having zero percent of the sample outside of liberal arts.

Some of the subgroups are very small, a few are quite large. Of the 68 groups covering the nine colleges, nine of them had fewer than ten members: one had five members, two had six members, three had eight members, and three had nine members. Forty-two of the 68 groups had between 10 and 19 members. Fourteen groups had between 20 and 39 members. And the three largest groups had 59, 84, and 94 members. Thus, roughly three fifths of the groups had between 10 and 19 members, and roughly four fifths of the groups had between 10 and 39 members. The median size of the subgroups was 16.

Over-all characterizations of the nine college atmospheres, as revealed by the mean scores on all of the CCA scales, are shown in Table V-2. In this table the scores of all individuals within the college are averaged to form a score for the college as a whole.

TABLE V-1. IDENTIFYING INFORMATION ON THE NINE COLLEGES

College	Location	Control	Estimated Size of Senior Class	Number of CCA Responses Used	Number of Academic Subgroups Analyzed	Approximate Enrollment	Approximate Percent of CCA Sample Outside Liberal Arts
Antioch	Ohio	Private	240	119	10	1,200	25%
Bennington	Vermont	Private	70	38	3	300	None
De Pauw	Indiana	Methodist	400	134	9	2,200	15%
Eastern Washington	Washington	State	350	115	9	2,200	60%
Florida	Florida	State	2,000	205	7	12,000	60%
Mississippi	Mississippi	State	700	248	6	4,100	65%
St. Olaf	Minnesota	Lutheran	300	95	7	1,900	25%
San Jose	California	State	2,000	306	11	12,000	55%
Swarthmore	Pennsylvania	Private	180	85	6	900	None

TABLE V-2. SUMMARY OF CCA MEAN SCORES FOR THE NINE COLLEGES

	Antioch	Bennington	De Pauw	Eastern Washington	Florida	Mississippi	St. Olaf	San Jose	Swarthmore	Means of Individuals	Means of Colleges
Intellectual Humanistic Esthetic											
Ad	13.02	13.18	8.01	8.17	7.92	6.89	9.19	9.36	11.64	9.03	9.70
Ae	11.09	12.26	9.76	8.32	8.61	7.71	10.32	8.25	11.78	9.12	9.79
St	11.58	11.16	7.48	6.14	6.93	6.12	10.53	7.43	11.99	8.08	8.82
Total	35.69	36.61	25.25	22.63	23.46	20.72	30.03	25.04	35.40	26.23	28.31
Friendly Group Welfare											
Ad	7.15	6.63	11.10	8.73	7.39	8.07	11.14	7.77	6.61	8.29	8.29
Ae	10.45	8.45	10.33	9.90	8.73	8.94	11.13	8.67	8.28	9.30	9.42
St	9.03	5.95	10.90	10.58	10.08	10.13	13.07	10.33	8.88	10.21	9.88
Total	26.64	21.03	32.33	29.21	26.2	27.14	35.34	26.76	23.77	27.79	27.57
Scientific Independent											
Ad	10.69	10.18	5.81	8.67	8.95	6.54	7.76	9.81	10.52	8.55	8.77
Ae	10.21	10.50	7.81	7.11	7.39	7.32	8.00	7.42	11.02	7.98	8.53
St	8.29	6.67	3.96	5.66	7.46	6.71	5.05	7.28	9.53	6.78	6.74
Total	29.18	27.45	17.58	21.44	23.80	20.57	20.81	24.51	31.07	23.30	24.04
Practical Status-Oriented											
Ad	2.48	2.74	9.23	7.65	9.98	10.20	7.96	8.97	4.38	8.17	7.07
Ae	3.11	1.37	7.90	8.83	8.27	9.74	7.34	8.85	3.31	7.59	6.52
St	3.19	2.71	10.29	8.48	9.78	11.40	7.96	9.00	3.39	8.50	7.36
Total	8.78	6.82	27.43	24.96	28.03	31.34	23.25	26.81	11.07	24.27	20.95
N	119	38	134	115	205	248	95	306	85	1,345	9

Looking at the total scores on each of the four scales, one can visualize each college's over-all profile. Antioch, Bennington, and Swarthmore, the three high prestige private liberal arts colleges, score the highest among the nine colleges on the Intellectual, Humanistic, Esthetic scale and on the Scientific, Independent scale. They score lowest among the nine on the Practical, Status-oriented scale. On the Friendly, Group Welfare scale De Pauw and St. Olaf, both denominational colleges, score high. On the Practical, Status-oriented scale Mississippi scores highest.

Some General Characteristics of Nine College Environments

One can also see, from Table V-2, the average magnitude of the differences between the nine colleges. Total scores on the IHE scale, for example, range from a high of 36.61 to a low of 20.72, a difference of 15.89 points. On the other scales the differences are as follows: W scale, 14.31; SI scale, 13.49; PS scale, 21.21. By making similar comparisons on each of the subscales, one finds that typically the student subscales show the largest difference between high and low schools, averaging 6.81 points; the administrative subscales are next, averaging 5.86 points; and the academic subscales show the smallest differences between colleges, averaging 4.92 points. All the figures in this table, one should recall, are averages.

Table V-3 shows the typical standard deviations for each of the nine colleges on the various subscales and total scale scores. The figures shown are the average standard deviations of the various subgroups in a college. It was supposed, in stating the case for developing the CCA, that a low variance of scores, or, put another way, a higher agreement among reporters, would be obtained when the students were reporting on one aspect of the college (their major field or their student friends) rather than on the college in general. One would expect, then, that the sigmas on the academic and student subscales would be smaller than the sigmas on the administrative subscales. This expectation was not confirmed. There is, characteristically, greater agreement on administrative aspects of the environment than on more specific academic subcultures and on student subcultures. Actually, the difference between sigmas, considering the average sigmas for the nine colleges, are not statistically significant.

In another respect, however, these sigmas do confirm the prediction that people would agree better about those aspects of the college they knew best. The variation of scores around the several CCA scales is definitely smaller than the variation around the several CCI scales. The typical sigma for the 10-item scales in the CCI is approximately 1.7 to 1.9. Projecting this to 15-item scales, such as are in the CCA, one would get sigmas of approximately 2.6 to 2.9. The actual mean of the sigmas obtained on the 15-item CCA scales, however, is only 2.1. If one projects to a 45-item scale, the CCI sigmas would be about 8 points, whereas the actual CCA sigmas show an average of 4.5 points.

TABLE V-3. SUMMARY OF CCA AVERAGE STANDARD DEVIATIONS FOR THE NINE COLLEGES

	Antioch	Bennington	De Pauw	Eastern Washington	Florida	Mississippi	St. Olaf	San Jose	Swarthmore	Average
Intellectual Humanistic Esthetic										
Ad	1.36	1.66	2.11	2.27	2.24	2.41	1.65	2.08	1.32	1.90
Ac	2.57	1.83	2.30	2.74	2.50	2.95	2.12	2.69	1.95	2.41
St	2.00	1.19	2.99	3.10	3.02	3.50	2.78	3.08	1.76	2.60
Total	4.33	3.34	5.35	6.33	5.69	7.39	5.09	6.31	3.88	5.30
Friendly Group Welfare										
Ad	1.15	1.41	1.94	2.09	2.13	2.37	1.61	2.24	1.70	1.96
Ac	2.03	1.66	2.30	2.27	2.39	2.69	1.72	2.59	1.95	2.18
St	2.12	2.05	1.82	2.12	2.48	2.71	1.58	2.70	2.47	2.23
Total	3.76	3.34	4.31	5.02	5.30	6.22	3.71	5.59	4.59	4.65
Scientific Independent										
Ad	1.56	1.92	1.62	1.69	1.87	1.95	1.49	1.78	1.36	1.69
Ac	2.12	1.74	2.26	2.41	2.19	2.16	2.17	2.17	1.75	2.11
St	2.03	1.60	2.23	2.10	2.33	2.23	1.93	2.16	2.08	2.08
Total	4.02	3.39	3.98	4.22	4.13	5.29	3.78	4.18	3.34	4.04
Practical Status-oriented										
Ad	1.17	1.42	1.89	1.81	1.91	1.74	1.95	1.83	1.21	1.66
Ac	1.76	1.34	2.22	1.84	1.95	2.24	1.62	1.97	1.51	1.83
St	1.82	1.86	2.04	2.35	2.45	2.57	1.86	2.48	1.83	2.14
Total	3.38	3.66	4.07	4.26	4.38	4.54	3.86	4.45	3.19	3.99

Table V-4 summarizes the range of means, in each college, for each subscale on each major press dimension. Here one can see that the largest differences are between academic subscales, and the smallest differences are between the administrative subscales. This is entirely in line with the expected results. When one is describing aspects of the total environment, as in the administrative subscales, it makes little difference what part of the environment one is in--the descriptions are all quite similar. But, when one is describing only part of the environment, as in the academic subscales, the differences between the several parts become apparent --the range of means being about 50 percent greater than in the previous case.

Many of the differences in Table V-4 seem rather small; but this impression is, to some extent, misleading. The ranges shown are between academic subgroups, reported separately for each of the three subscales. When the three subscales are grouped together, however, one sees the total range of means in each of the four major press dimensions. This is shown in Table V-5. Here, considering all of the scales which comprise a major dimension (administrative, academic, and student subscales comprising the IHE dimension, for example), one sees that the academic subgroups within the college have a range of means of roughly 2.5 to 6 points, the average being 4.0 on the IHE variable, 4.6 on the W variable, 4.6 on the SI variable, and 3.4 on the PS variable. Since the typical sigma of a subgroup is roughly 2.1, it is clear that the average maximum difference between subgroups in a college is roughly the equivalent of two standard deviations. However, as also shown in Table V-5, the differences between colleges are much greater than the differences within colleges. On the IHE, W, and SI variables, the differences between colleges are typically twice as large as the differences within colleges; on the PS scale the differences between colleges are more than three times as large as the differences within colleges. If environmental press is at all related to educational outcomes (as will be demonstrated later in this report), then the choice of a college is a lot more important than the choice of a subgroup within a college. Note in Table V-5, for example, that the lowest subgroup press toward the IHE dimension at Antioch, Bennington, and Swarthmore is higher than the highest subgroup press in this direction at Eastern Washington, Florida, and Mississippi. There are many other examples of nonoverlap that can be seen in the table. The nine colleges in the present study are a very diverse group. Among a narrower range of colleges, the importance of subgroups in relation to educational outcomes would probably be greater.

In Chapter III it was noted that there was a substantial correlation between the size of the institution and the variance of scores on the CCI scales, with correlations of .73 and .62 being reported. The number of cases per school was unrelated to the size of the school in these correlations. With the CCA there still is a substantial relationship between the typical subgroup sigmas in a school and the size of the school. This rank order correlation was .72. However, the size of subgroups was also positively related to the size of the institution. When this factor (size of subgroups) was held constant, the partial correlation between the sigma

TABLE V-4

RANGE OF MEANS ACROSS ACADEMIC SUBGROUPS WITHIN EACH OF THE NINE COLLEGES, FOR EACH SUBSCALE OF EACH PRESS DIMENSION

	Antioch	Bennington	De Pauw	Eastern Washington	Florida	Mississippi	St. Olaf	San Jose	Swarthmore	Average Range
Intellectual Humanistic Esthetic										
Ad	1.0	.2	1.4	2.8	1.9	.9	2.7	2.4	1.3	1.7
Ac	3.1	1.0	4.5	3.1	2.2	2.1	2.0	2.4	2.1	2.5
St	1.6	.4	3.2	3.2	2.4	2.0	4.2	1.7	2.4	2.3
Friendly Group Welfare										
Ad	1.2	1.0	3.3	2.6	2.3	1.9	3.5	1.9	1.9	2.2
Ac	2.4	1.0	2.9	3.4	4.6	1.8	2.4	2.0	3.5	2.7
St	2.0	.2	1.7	2.9	2.3	2.0	2.7	1.9	3.1	2.1
Scientific Independent										
Ad	.7	.5	1.4	1.5	1.2	.7	1.6	1.5	.7	1.1
Ac	2.4	.5	3.2	2.9	2.3	3.6	3.2	3.7	2.2	2.7
St	3.0	.6	2.8	2.8	2.9	3.1	2.1	3.0	.7	2.3
Practical Status-oriented										
Ad	1.3	1.4	1.8	2.0	.6	1.9	1.4	1.6	1.2	1.5
Ac	2.3	1.2	1.8	4.0	2.3	2.5	2.0	2.3	2.3	2.3
St	2.0	1.0	1.7	2.3	2.6	2.8	2.8	2.5	2.5	2.2
Average Range										
Ad	1.1	.8	2.0	2.2	1.5	1.4	2.3	1.9	1.3	1.6
Ac	2.6	.9	3.1	3.4	2.9	2.5	2.4	2.6	2.5	2.5
St	2.3	.6	2.4	2.8	2.6	2.5	3.0	2.3	2.2	2.2

TABLE V-5

SUMMARY OF TOTAL RANGE OF SUBGROUP MEANS WITHIN EACH OF THE NINE COLLEGES, AND BETWEEN COLLEGES

	IHE			W			SI			PS		
	High	Low	Range	High	Low	Range	High	Low	Range	High	Low	Range
Antioch	13.6	10.2	3.4	11.6	6.6	5.0	11.4	6.9	4.5	4.6	2.0	2.6
Bennington	13.3	10.9	2.4	9.1	5.9	3.2	10.8	6.5	4.3	3.4	.9	2.5
De Pauw	11.1	5.6	5.5	12.6	8.1	4.5	8.8	2.8	6.0	10.7	7.2	3.5
Eastern Washington	10.0	4.2	5.8	12.0	7.2	4.8	9.4	4.5	4.9	11.1	7.1	4.0
Florida	9.3	5.7	3.6	11.4	6.4	5.0	9.2	6.0	3.2	11.0	6.9	4.1
Mississippi	8.9	5.5	3.4	11.1	7.1	4.0	9.7	5.5	4.2	12.3	8.0	4.3
St. Olaf	12.5	7.3	5.2	14.1	8.7	5.4	9.3	3.8	5.5	9.7	6.3	3.4
San Jose	10.5	6.6	3.9	11.2	6.7	4.5	10.5	5.2	5.3	10.2	7.5	2.7
Swarthmore	13.0	10.3	2.7	10.6	5.9	4.7	12.3	9.2	3.1	5.3	2.2	3.1
Average Range Within Colleges			(4.0)			(4.6)			(4.6)			(3.4)
Differences Between Colleges	13.6	4.2	(9.4)	14.1	5.9	(8.2)	12.3	2.8	(9.5)	12.3	.9	(11.4)

of subgroups and the size of the institution was .51. These rank order correlations, of course, are based on only nine institutions and thus have a high standard error. A correlation of .5 is about at the borderline of statistical significance at the 5 per cent level. Although the above data are at best suggestive and certainly in no way conclusive, it appears that the variability of scores on the CCA are related to the size of the institution somewhat more than they are related to the size of the subgroups on which they are computed. The partial correlation between size of sigmas and size of subgroups, with size of institution held constant, was .28.

Two other rank order correlations are of some relevance at this point. The correlation between the typical range of subgroup means within a school and the size of the school was .50; between range of means and complexity (number of subgroups outside liberal arts) the correlation was also .50.

In over-all characteristics, the nine schools in the present study reflect considerable diversity--in size, complexity, control, selectivity, and location. As measured by the CCA, the differences in atmosphere between the nine schools are substantial. Within the nine schools there are also clear differences between the press of various subgroups. Having described various properties of the measuring instrument and some general results from its application, one can now turn to a detailed examination of each of the nine institutions. These are presented in the succeeding chapters: first, three small colleges--Bennington, Swarthmore, and Antioch; next, two middle-sized colleges--St. Olaf and De Pauw; and then, four large more complex institutions--Eastern Washington, Mississippi, Florida, and San Jose.

In each of the next nine chapters, describing the nine colleges, tables have been placed at the end of the chapter rather than interspersed within the text. Between some of the tables there are minor variations in the number of cases in certain subgroups and some minor variations in total Ns. These are not errors. A general policy was followed of using all available data for each analysis rather than omitting all cases which were incomplete in only one or two respects.

CHAPTER VI

BENNINGTON

Tiny Bennington College, enrolling about 350 women, is built to a comfortable human scale, its low white buildings and red barn fitting naturally with the rural countryside of hilly Vermont. In its brief 32 years of existence (it first enrolled students in 1932) it has earned a high place in the company of the top-flight liberal arts colleges. The intellectual caliber of its student body, measured by the College Board examinations, ranks it alongside older and distinguished Smith and Vassar, Williams and Wesleyan. Its campus atmosphere, measured by the CCA, matches the quality of its students.

Environmental Scores

Its pattern of emphasis, or environmental press, may be described as extremely high on the Intellectual, Humanistic, Esthetic variable, extremely low on the Practical, Status-oriented variable, relatively high on the Scientific, Independent variable, and relatively low on the Group Welfare or "togetherness" variable. These scores, for the college as a whole and for the three academic subgroups into which its students have been divided, are shown in Table VI-1.

Although the number of cases listed at Bennington is small, it constitutes a little more than half of the junior class. No subdivisions into academic groups were feasible beyond the three shown in the table--Literature, Social Sciences, and Art-Music-Dance. There were not enough students to form a subgroup of Science majors, for example; and Art-Music-Dance were combined into a single category of eleven cases on the assumption that they share a common orientation to the expressive or performing arts.

The agreement among Bennington girls about what is characteristic of their college is very high. From Table VI-2, showing the standard deviations of the scores on all of the CCA scales, it is clear that roughly two thirds of the scores on all of the 15-item scales fall within a narrow range of three to four points, the average being about three and one-half. On the 45-item scales, two thirds of the scores are typically confined within a range of seven points.

Table VI-3 shows the extent to which each subgroup mean differs from the composite mean of the college. On none of the 15-item scales does any subgroup mean differ from the mean of the college as a whole by as much as one point; and on none of the 45-item scales is the difference as much as two points. A computer program for t-tests indicated that no subgroup mean differed significantly from the composite. The subgroups are, of course, very small; there are only three subgroups and thus each subgroup comprises roughly one third of the composite, a fact which obviously limits the likelihood of finding significant differences. One can also read Table VI-3, however, to note the degree of difference between any two subgroups. The top row of the table, for example, contains the following numbers: .02, -.09, and .07. The maximum difference between any two of these figures is .16. The largest difference between any two subgroups on any of the 15-item scales is 1.35 points. This difference is not significant. The largest difference between any two subgroups on any of the 45-item scales is 3.31 points (between Art-Music-Dance and Social Sciences on the Practical, Status-oriented scale). This is almost, but not quite, significant at the 5 percent level.

Although there are, to summarize, no significant differences between any subgroups on any scales, there is a consistent tendency for the Art-Music-Dance group to give the college a slightly higher score on the Practical, Status-oriented scale than it is given by the Literature or the Social Science groups. Since all scores on this variable are extremely small, however, all three groups are in essential agreement with each other. The college as a whole is perceived in nearly identical fashion by majors in Literature, majors in Art-Music-Dance, and by majors in Social Sciences; and even when each group is describing itself rather than the college as a whole there are no differences between these academic subcultures.

Attainment Scores

It is not surprising, given the above conditions, that there are also no differences between any of the subgroups and the composite of the college in the ratings of progress made toward the attainment of any of the eleven listed objectives. This is shown in Table VI-4. Nor does any subgroup differ significantly from the composite of the college in its mean responses to three items dealing with satisfaction with life at the college, nor in its mean estimate of grades received at the college.

If one arranges the eleven objectives in rank order for each group, one finds that each subgroup believes it has made greatest progress toward Objectives 6 and 10 (personal development and appreciation of art, music, and literature) and least progress toward Objectives 7, 2, and 11 (citizenship participation, vocational training, and understanding science and technology). This information is shown in Table VI-5. There are only two instances in which the rank order of an objective in one group differs by as much as four places from its rank order in another group. One is in the case of Objective 9 (speak, write, and communicate clearly): among students in Art-Music-Dance this ranks third, compared with seventh in the other two groups. The other is Objective 5 (social development, getting along with people) which gets a rank of 2 1/2 in the Social Science group and a rank of 6 1/2 in the Art-Music-Dance group. In general, the fact that objectives such as personal development, appreciation of the arts, a broad literary and cultural education, critical thinking, and effective communication are ones toward which Bennington girls judge they have made most progress is highly consistent with the published purposes and descriptions and general reputation of the college. Students' perceptions of the Bennington environment, and the extent to which they progress toward goals relevant to these perceptions, are highly congruent. The extent of this congruence is well illustrated by comparing the CCA scores for the college with the students' estimates of progress toward objectives relevant to the CCA scores. The highest of the four CCA total scores at Bennington is on the IHE emphasis. Objectives relevant to this emphasis (numbers 1, 4, and 10) also have the highest mean attainment ranking. The lowest of the four CCA total scores is on the PS emphasis; and the objective relevant to this emphasis (number 2) similarly has the lowest attainment ranking. The second highest CCA total score is on the SI emphasis; and the average attainment ranking of the objectives relevant to this emphasis (numbers 3, 8, and 11) is also second highest.

Relationships Between Environment and Attainment

The close relationship between environmental emphasis and attainment of relevant objectives for the college as a whole is clear. Since none of the three subgroups deviated significantly from the college average on any CCA scale or on any attainment rating, one would not expect to find any differential pattern of press and progress between the subgroups. Nevertheless, Table VI-6 is presented at this time as illustrative of the way to see whether such differential relationships exist. The mean press scores and the mean progress ratings on relevant objectives, for each subgroup, are shown by plus (+) and minus (-) signs to indicate whether they are above or below the college average. One can then easily discern whether the members of a subgroup whose press is above average also express an above-average sense of progress toward objectives relevant to that press. As the summary of this table indicates, there are as many inconsistent relationships as there are consistent ones--a result which is to be expected at Bennington since the plus and minus signs are, in the first instance, merely chance or nonsignificant variations from the college averages. At other colleges, where subgroups differ significantly from the composite, one would expect some definite patterns to emerge.

Differences Between Administrative Academic, and Student Subscores

The only differences within the Bennington environment revealed by the CCA scores are differences between the administrative, academic, and student aspects of the college atmosphere. These are shown in Table VI-7. The scores reported in this table are obtained by the "66%+" method;

namely, by counting the number of items answered in the keyed direction by 66 percent or more of the respondents. An item is judged to be "characteristic" of the environment only if the students agree that it is by a margin of 2 to 1 or greater (at least 66%-33% consensus). One can see in each subscale how many items are characteristic of the college. On the IHE scale, for example, 14 of the 15 items from the administrative segment were regarded as characteristic of Bennington, 12 from the academic segment, and 11 from the student segment. On the W, or Group Welfare, scale Bennington's score is composed of three items from the student subscale and six items each from the administrative and academic subscales.

To interpret these differences one needs a point of reference. Unless the three subscales are of equal difficulty, the scores cannot be directly compared. The only available reference point is the typical or composite difference for the nine colleges studied. In the table, then, one can compare the relative contributions of administrative, academic, and student items to the total environment at Bennington against the typical differences between these segments of the scales for the composite of the nine colleges.

Typically, across the nine colleges, there is no difference between the administrative and academic subscores on the IHE variable; and typically there is a difference of about two points between the administrative and student subscores and also between the academic and student subscores. At Bennington, then, the IHE score owes relatively more to the administrative characteristics and emphases of the college than it does to the academic and student emphases--although the differences are small. On the W score the lack of difference between administrative and academic subscores at Bennington is typical of the nine colleges. The three-point lower score on the student subscale, however, is unusual; for typically the student subscore is 1.3 points higher than either the administrative or academic subscores. At Bennington such emphasis toward togetherness as there is in the environment comes very little from student sources. On the SI scale, the similarity between the administrative and academic subscores at Bennington is typical of the nine colleges. On the average, the student subscore is three points lower; at Bennington, however, it is five to six points lower. The administrative and academic aspects of the environment account for most of Bennington's score on the Scientific, Independent scale. Except for one item in the administrative subscale, Bennington scores zero on the PS variable and therefore comparisons are meaningless.

All aspects of the Bennington environment are working together to produce its strong emphasis on intellectual, humanistic, esthetic values. If one assumes that Bennington wants to have somewhat more of a friendly, group welfare atmosphere than it now has, and wants to push harder in the scientific, independent direction, then one can say that both the administrative and the academic segments of the Bennington environment are working together toward these ends.

Personality Scores

Table VI-8 shows the mean scores of students on various aptitude, personality, and attitude tests. Most of the differences between the mean scores of the three subgroups are small and insignificant. There does, however, seem to be an identifiable trend or pattern of difference between the Literature group and the Art-Music-Dance group. On four of the tests (RAT, AA, DS, and NA) the Literature group has the highest mean scores and the Art-Music-Dance group has the lowest mean scores, with the Literature students being at a somewhat higher level of personal and social maturity. So far as the present study is concerned, the relevance of this finding is simply this: despite some differences in input (student characteristics in the three subgroups) there were still no differences in the perceptions of the environment or in the estimated progress toward various objectives.

Summary

From what the students who live at Bennington say about it, the college environment is intellectually challenging and esthetically creative. It is not, as one might expect of a small college in a small town, a strongly group welfare oriented community. Privacy, detachment, and autonomy are more characteristic than togetherness. It is rather totally devoid of any push for status, personal advantage, or practical benefit, or of any tightly ordered or closely supervised constraints. In line with its intellectual, esthetic emphasis, and its atmosphere of autonomy and independence, its students believe that they have made greatest progress toward objectives that are highly congruent with these environmental emphases.

Whether students are describing the college as a whole, or their own academic part of it, or their own student friends, the resulting descriptions are the same. None of the three academic subgroups is significantly different from one another or from the college composite, either in its environmental press or in the degree to which its members believe they have progressed toward the achievement of relevant goals.

The Bennington environment is clearly a unified one rather than a collection of disparate parts. The only exception to this mutually supportive influence comes not from differences between academic fields but rather from certain differences in the degree of emphasis coming from administrative and academic sources on the one hand, and student sources on the other, with respect to the welfare and the scientific, independent characteristics of the environment.

TABLE VI-1

BENNINGTON: CCA MEAN SCORES FOR SUBGROUPS AND TOTAL COLLEGE

Scale	Subgroups			Total College	
	Literature (N=15)	Art, Music, Dance (N=11)	Social Science (N=12)	All Students (N=38)	Average of Subgroups
Intellectual Humanistic Esthetic					
Ad	13.20	13.09	13.25	13.18	13.18
Ac	12.40	11.64	12.67	12.26	12.24
St	11.20	11.36	10.92	11.16	11.16
Total	36.80	36.09	36.83	36.61	36.59
Friendly Group Welfare					
Ad	7.20	6.18	6.33	6.63	6.57
Ac	8.27	9.09	8.08	8.45	8.48
St	5.87	5.91	6.08	5.95	5.95
Total	21.33	21.18	20.50	21.03	21.00
Scientific Independent					
Ad	10.40	10.18	9.92	10.18	10.17
Ac	10.27	10.55	10.75	10.50	10.52
St	7.07	6.64	6.50	6.76	6.74
Practical Status-oriented					
Ad	3.00	3.27	1.92	2.74	2.73
Ac	1.20	2.09	.92	1.37	1.40
St	2.33	3.36	2.58	2.71	2.76
Total	6.53	8.73	5.42	6.82	6.89

TABLE VI-2

BENNINGTON: OCA STANDARD DEVIATIONS FOR SUBGROUPS AND TOTAL COLLEGE

Scale	Subgroups			Total College	
	Literature	Art, Music, Dance	Social Science	All Students	Average of Subgroups
	(N=15)	(N=11)	(N=12)	(N=38)	
Intellectual Humanistic Esthetic					
Ad	1.90	1.56	1.53	1.70	1.66
Ac	1.67	2.38	1.43	1.88	1.83
St	1.33	1.49	.76	1.25	1.19
Total	3.62	3.75	2.64	3.40	3.34
Friendly Group Welfare					
Ad	.98	1.64	1.60	1.48	1.41
Ac	1.48	2.07	1.44	1.71	1.66
St	2.19	1.50	2.47	2.11	2.05
Total	3.18	3.19	3.66	3.36	3.34
Scientific Independent					
Ad	1.36	2.21	2.18	1.92	1.92
Ac	2.20	1.67	1.36	1.83	1.74
St	1.95	1.82	1.04	1.69	1.60
Total	3.13	3.91	3.13	3.38	3.39
Practical Status-oriented					
Ad	1.03	1.91	1.32	1.53	1.42
Ac	1.38	1.44	1.19	1.42	1.34
St	2.09	1.87	1.61	1.93	1.86
Total	3.26	4.49	3.23	3.88	3.66

TABLE VI-3

BENNINGTON: DIFFERENCES BETWEEN SUBGROUP MEANS AND COMPOSITE MEAN ON CCA SCALES

Scale	Subgroup		
	Literature	Art, Music, Dance	Social Science
Intellectual Humanistic Esthetic			
Ad	.02	-.09	.07
Ac	.14	-.62	.41
St	.04	.20	-.24
Total	.19	-.52	.22
Friendly Group Welfare			
Ad	.57	-.45	-.30
Ac	-.18	.64	-.37
St	-.08	-.04	.13
Total	.30	.15	-.53
Scientific Independent			
Ad	.22	.00	-.26
Ac	-.23	.05	.25
St	.31	-.12	-.26
Total	.28	-.09	-.28
Practical Status-oriented			
Ad	.26	.53	-.82
Ac	-.17	.72	-.45
St	-.38	.65	-.13
Total	-.29	1.91	-1.40

TABLE VI-4

BENNINGTON: DIFFERENCES BETWEEN SUBGROUP MEANS AND THE COLLEGE MEAN ON OBJECTIVES, SATISFACTIONS, AND GRADES

	N	OBJ 1	OBJ 2	OBJ 3	OBJ 4	OBJ 5	OBJ 6	OBJ 7	OBJ 8	OBJ 9	OBJ 10	OBJ 11	SAT 1	SAT 2	SAT 3	GRADES
College	38	1.75	3.14	1.97	2.00	1.86	1.28	2.67	1.75	1.83	1.36	3.28	1.53	1.89	2.28	2.97
Literature	15	-.04	-.22	.04	-.07	-.07	.07	.10	-.11	-.17	.07	.07	.03	.03	.14	-.32
Art, Music, Dance	11	.05	.44	-.03	-.20	-.14	-.02	-.33	.15	.33	.26	-.32	.03	-.31	-.32	.27
Social Science	12	.00	-.11	-.03	.25	.19	-.05	.17	.00	-.09	-.31	.20	-.05	.22	.11	.14

NOTE: In the top row of this table, a low score indicates a favorable rating.
In the rest of the table the minus (-) signs have their customary meaning of "less favorable."

TABLE VI-5

BENNINGTON: RANK ORDER OF ESTIMATED PROGRESS TOWARD OBJECTIVES

	Rank	Total	Literature	Art, Music, Dance	Social Science
Highest	1	6	6	10	6
	2	10	10	6	[10
	3	[1	1	9	[5
	4	[8	8	8	[1
	5	9	[3	1	[4
	6	5	[5	[3	[8
	7	3	9	[5	9
	8	4	4	4	3
	9	7	7	2	7
	10	2	11	7	11
Lowest	11	11	2	11	2

NOTE: Bracketed numbers indicate tied ranks.

TABLE VI-6

BENNINGTON: "SIGN TEST" ANALYSIS OF RELATIONSHIPS BETWEEN ENVIRONMENT AND ATTAINMENT IN SUBGROUPS

Subgroups	IHE		V		SI		PS	
	Press	Progress 1, 4, 10	Press	Progress 5, 7	Press	Progress 3, 8, 11	Press	Progress 2
Literature	+	--+	+	-+	+	+-+	-	-
Art-Music-Drama	-	+-+	+	--	-	-+-	+	+
Social Science	+	0+-	-	++	-	-0+	-	-

SUMMARY OF RELATIONSHIPS

Pattern	No. of Examples	
Fully consistent	3	5
Mainly consistent	2	
Neutral	3	
Mainly inconsistent	2	4
Fully inconsistent	2	

NOTE: + = Subgroup score or rating above average
- = Subgroup score or rating below average

TABLE VI-7

BENNINGTON: DIFFERENCES BETWEEN ADMINISTRATIVE, ACADEMIC, AND STUDENT SUBSCORES (66%+ METHOD)

CCA Scores Based on 66%+ Consensus

	IHE	W	SI	PS
Ad	14	6	9	1
Ac	12	6	10	0
St	11	3	4	0
Total	37	15	23	1

Differences

		Bennington	Composite of Nine Colleges
IHE	Ad vs. Ac	2	.1
	Ad vs. St	3	2.2
	Ac vs. St	1	2.1
W	Ad vs. Ac	0	0
	Ad vs. St	3	-1.3
	Ac vs. St	3	-1.3
SI	Ad vs. Ac	-1	- .2
	Ad vs. St	5	2.8
	Ac vs. St	6	3.0
PS	Ad vs. Ac	1	.3
	Ad vs. St	1	-1.1
	Ac vs. St	0	-1.4

NOTE: Minus (-) signs indicate that the first item of the pair is lower than the second.

TABLE VI-8

BENNINGTON: MEAN SCORES ON APTITUDE, PERSONALITY, AND ATTITUDE TESTS

Subgroups	Tests										
	SAT-V	SAT-M	RAT	AA	DS	ES	LI	NA	OR	Rad	Pol
Literature	605	492	22	39	47	36	60	23	68	22	8
Art-Music-Dance	589	502	17	34	42	39	58	13	65	23	11
Social Science	577	487	19	36	45	35	62	15	68	27	11
Total	590	494	19	36	45	37	60	17	67	24	10

Key:
SAT-V = Scholastic Aptitude Test - Verbal
SAT-M = Scholastic Aptitude Test - Mathematical
RAT = Remote Associates Test
AA = Atheism-Agnosticism
DS = Developmental Status
ES = Estheticism
LI = Liberalism
NA = Nonauthoritarian
OR = Originality
Rad = Radicalism
Pol = Political Liberalism

CHAPTER VII

SWARTHMORE

Nonsectarian, but Quaker by tradition, Swarthmore opened for instruction in 1869. In the 1920s, under the presidency of Frank Aydelotte, it gained national recognition for the introduction of an honors program. Today about a third of the upperclassmen are enrolled in honors work; and the college ranks high in the proportion of its graduates who subsequently earn the doctorate degree and enter one of the scholarly professions.

Although it has recently developed a program in engineering sciences, the college remains primarily a liberal arts institution. In the sample of seniors responding to the CCA, involving nearly half of the senior class, the number of cases from Engineering was too small to form a usable subgroup for analysis in the present study. If an engineering subgroup had been obtained, the Swarthmore environment might be a little more diverse than the present study shows it to be; but even so, the engineers constitute only about 10 percent of the student body. Basically, Swarthmore is a small, highly selective, academically oriented liberal arts college.

Environmental Scores

The CCA returns from Swarthmore were divided into six academic subgroups--English, Math and Physics, Psychology, History, Political Science and Economics, and Biological Sciences. Tables VII-1 and VII-2 show, respectively, the means and standard deviations on all the CCA scales for each of these academic subgroups and for the college as a whole. Over all, Swarthmore, like Bennington, is seen to have typically high scores on the Intellectual, Humanistic, Esthetic scales and typically low scores on the Practical, Status-oriented scales. It ranks higher than Bennington, however, on the Scientific, Independent scales and also on the Friendly, Group Welfare scales.

The deviations between each subgroup mean and the composite for the college are shown in Table VII-3. Of the 96 comparisons in the table (six subgroups with 16 scores for each), eight are statistically significant at the 5 percent level or better. If one assumes that in this number of comparisons four or five are likely to be significant by chance, then the number of significant differences actually obtained is quite small. Regardless of statistical significance, however, the actual magnitude of deviation between any subgroup and the composite is also quite small.

For example, on the 15-item scales, there are only two instances (out of 72 comparisons) in which a subgroup differs from the composite by as much as 1.5 points. On the 45-item scales, there are only two instances (out of 24) in which the deviation from the composite is greater than 3.0 points.

Differences between one subgroup and another were not tested for statistical significance; only the differences between subgroups and the composite were so tested. From Table VII-3, however, one can determine directly the magnitude of the difference in scores between any two subgroups on each of the scales. There are only five instances in which any pair of subgroups differ by more than three points on any of the 15-item scales; these are as follows: Psychology is higher than Math-Physics on the academic subscale of the IHE scale; Psychology is lower than History and also lower than Political Science-Economics on the academic subscale of the W scale; and Math-Physics is higher than English and also higher than History on the academic subscale of the PS.

With the few exceptions noted thus far, Swarthmore students perceive the college as a whole and also the various subparts of the college with a high degree of similarity, regardless of the academic field they are in and regardless of the particular academic field or group of student friends they are describing.

Attainment Scores

Estimates of progress toward the attainment of various educational objectives by students in the several academic subgroups and for the college as a whole are shown in Table VII-4. None of the estimates in the subgroups differs significantly from the college as a whole in progress toward Objectives 1, 4, 5, 8, and 10. On Objectives 6 and 7 (personal development and effective citizenship), the Political Science-Economics subgroup is significantly higher than the college as a whole. On Objective 3 (specialization for further scholarly work) the Math-Physics subgroup and the Biological Science subgroup are significantly higher than the college as a whole. On Objective 2 (vocational training) the Math-Physics group is higher and the History group is lower than the college as a whole. On Objective 9 (effective communication) the Math-Physics group is lower and the Political Science-Economics group is higher than the college composite. The largest number of differences occurs in the ratings of progress toward Objective 11 (science and technology), with the Math-Physics and the Biological Science groups being higher and the English, History, and Political Science-Economics groups being lower than the college composite.

With respect to satisfactions and grades, there is one group (English) which gave a significantly lower than average response to the question, "How much of the time do you feel satisfied with your college?" and one group (Math-Physics) which gave a significantly higher than average response to the question, "What grades have you made in college?"

A somewhat different view of progress toward objectives is shown in Table VII-5. For each subgroup the objectives are listed in the rank order of their score within the group. For the college as a whole, the objectives toward which students' estimates of progress are highest are specialization for further scholarly work, personal development, critical thinking, and broad cultural education. These estimates are consistent with Swarthmore's general reputation for liberal education and for having a high proportion of graduates who subsequently obtain the doctorate degree.

The greatest variation in ranks among the subgroups is seen on Objective 11 (understanding science and technology). The science subgroups of Math-Physics and Biological Science rate this near the top of the list whereas all other subgroups rate it near the bottom of the list.

Relationships Between Environment and Attainment

Table VII-6 shows the relationships between environmental emphases and progress toward relevant objectives. The data for this representation come from Tables VII-3 and VII-4; all significant differences from each of these two tables are here shown in juxtaposition. For example, on the IHE scale, the Psychology subgroup was significantly higher than the college composite on the academic subscale. It was not, however, significantly different from the composite in its ratings of attainment of Objectives 1, 4, or 10. The plus (+) sign opposite Psychology under the Progress column means, however, that the Psychology subgroup was above the college average in its attainment ratings of at least two of the three objectives indicated, and hence represents in this case attainment ratings that are in a direction consistent with the environmental emphasis. On the W scale, the table shows that the Political Science-Economics subgroup was significantly higher than the college composite both on the academic subscale and on the total scale. The Political Science-Economics subgroup was also significantly higher than the college composite in its rating of progress toward the attainment of Objective 7 (citizenship). A line is drawn around this particular set of data to highlight the fact that here is an example of a significant environmental emphasis that is paralleled by a correspondingly significant rating of progress toward the attainment of an objective consistent with the environmental emphasis. The W column also shows that the English subgroup was significantly lower than the college composite both on the student subscale and on the total scale. This group did not differ significantly from the college composite in its ratings of attainment on either of the relevant objectives. If the group had been below the college composite in its ratings of both objectives, a minus (-) sign would be shown in the adjacent column; the zero therefore means that it was above average on one objective and below average on the other and that no directional sign, plus or minus, can be assigned to the data. In the SI column, there are examples of a different sort of relationship. The Math-Physics subgroup judged its attainment of Objectives 3 and 11 significantly greater than the college composite. However, the Math-Physics subgroup scores on the SI scales of the CCA were not significantly different from the college composite. They were, nevertheless, above average (on total SI score) and so a plus sign appears in the adjacent column.

There are, altogether, ten sets of comparisons in Table VII-6. The summary at the bottom of the table indicates that four of these sets are examples of a significant environmental score(s) paralleled by a significant attainment rating(s) on a relevant objective(s). There are no sets which show an inconsistent relationship between environmental emphasis and attainment of a relevant objective. The summary lists all possible combinations, with the first three describing consistent relationships, the last three describing inconsistent relationships, and with the middle one describing a neutral result. Consistency in this context, and indeed in the context of this entire report, refers to the general hypothesis of the research--namely, that deviant subcultures and deviant attainments will be related to one another in a consistent manner. Of the ten sets of significantly deviant subgroup results at Swarthmore (significantly deviant in any environmental press score or significantly deviant in estimated progress toward any relevant objective), nine support the general hypothesis; of these nine, four support the hypothesis at a significant level (that is, both press and progress are significant); one of the ten sets is neutral; and no set is inconsistent with the general hypothesis.

A more inclusive but less rigorous test of the hypothesis is illustrated in Table VII-7. Here, each subgroup is recorded as being above or below the college average. Under the columns labeled "press" the sign means that the total score for the subgroup was above or below the college average, and the sign is circled if that total score or any one of the three subscores (administrative, academic, or student) was significantly different from the college average. Under the columns labeled "progress" the sign means that the subgroup's rating of progress toward the attainment of the objectives indicated was above or below the college average, with the sign circled if the difference was significant. All of the totally consistent patterns are enclosed to facilitate easy identification by the reader.

At the bottom of the table the various patterns are summarized. Again it is clear that the number of consistent patterns, 18, is much greater than the number of inconsistent ones, three.

Differences Between Administrative, Academic, and Student Subscores

Looking now at the dynamics of the Swarthmore environment, not from the point of view of differences between various subcultures but rather from the point of view of differences between administrative, academic, and student "sources" of the environmental press, one can see a number of ways in which Swarthmore differs from the composite of the nine colleges.

These dynamics are shown in Table VII-8, in which the scores are the number of items in each scale answered in the direction of the key by a 2-to-1 consensus among the students, or, in other words, by 66 per cent or more of the respondents. One can see, here, that the score on the IHE scale is comprised of nearly equal contributions from the administrative, academic, and student subscales. On the W scale, however, the contribution to the total score from the student subscale is nearly as great as that from the administrative and academic subscales combined. On the SI and PS scales, the differences between the subscores are relatively small. How this pattern at Swarthmore compares with what is typical for the composite of the nine colleges is also shown in the table. Typically the administrative and academic subscores on the IHE scale are about two points higher than the student subscore. At Swarthmore this is not true. The student subscore at Swarthmore contributes relatively more to the total IHE press of the college than it does at other colleges. The really notable differences, however, occur on the W scale. The academic subscore at Swarthmore contributes relatively more to the total W press than does the administrative subscore; but most of the total friendly, group welfare emphasis which students attribute to the Swarthmore environment comes from items in the student subscore of that scale. This result is directly opposite to that at Bennington, where the student subscore contributed least to the group welfare emphasis. At Swarthmore it appears that student "sources" of press account primarily for the group welfare atmosphere of the campus.

Personality Scores

Table VII-9 shows the Scholastic Aptitude Test scores and scores on various parts of the Omnibus Personality Inventory for the Swarthmore students. The Psychology subgroup had to be dropped from this table because of insufficient data. On the SAT-Verbal the differences between the subgroups are relatively small--less than half a standard deviation even in the most extreme case. On the SAT-Math, however, the Math-Physics subgroup stands out prominently over all other groups.

On the OPI scales the mean scores of the subgroups are not significantly different, with the one exception that English majors are significantly higher than Math-Physics majors on the Es (Esthetic) scale. The manual for the OPI indicates that various scales can be combined into larger factors. The Swarthmore data have not been translated into factor scores, but if they were a few general patterns would emerge quite clearly. One factor, for example, is called Tolerance and Autonomy or Nonauthoritarianism. This pattern can be estimated from the Swarthmore data by looking at the scales labeled SM, RL, DS, IE, TO, TI, and CO. On five of these seven measures the English subgroup has the highest score and the Political Science-Economics subgroup has the lowest score. Another factor on which the English subgroup is consistently higher than the Political Science-Economics subgroup is called Scholarly Orientation and is based on the following subtests: TI, TO, ES, and CO. A third factor, called Masculine Role, seems to characterize the Math-Physics group--high Masculinity, high Theoretical Orientation, and low Estheticism. Despite the fact that the subgroups do not differ from one another on single measures (with the one exception noted above), it seems obvious that on larger dimensions there are important differences in student input between some of the groups--especially English, Math-Physics, and Political Science-Economics.

The bearing of these differences in student characteristics upon environmental press or upon progress toward the attainment of various objectives is difficult to identify. None of the three subgroups differs significantly in environmental press from the college as a whole on the IHE or the SI variables. On the W variable there is a large and significant difference between the English and the Political Science-Economics groups, but the relevance of this to student characteristics is certainly not obvious unless one is willing to argue that tolerance, nonauthoritarianism, and scholarly orientation should be related negatively to a friendly, group welfare oriented atmosphere. With respect to objectives, it is true that Math-Physics and Political Science-Economics students differ from the college composite on several items. Some of these differences might be relevant to personality characteristics--as for example vocational training and understanding science and technology being possibly related to the masculine role characteristics of the Math-Physics students. On the other hand, some differences in attainment which one might expect to be significantly related to student input are not--as for example developing an appreciation of the arts being related to the differences in Estheticism scores of Math-Physics students as compared with English students.

Summary

The Swarthmore environment, like the smaller Bennington environment, is predominantly homogeneous. On the administrative subscores of the CCA, no subgroup of academic majors differed significantly from the college composite. On the student subscores of the CCA, only one out of 24 possible differences was significant. And on the academic subscores five out of 24 possible differences were significant. In the mean scores of progress toward objectives, there were 13 instances in which a subgroup differed significantly from the composite, out of 66 comparisons. One might conclude from this that there is a greater degree of differential attainment than of differential press in the Swarthmore environment. However, the two are not inconsistent: for no significantly different environmental press was coupled with attainment ratings of relevant objectives that were incongruent with the press, and vice versa.

Math-Physics students at Swarthmore are uniquely high on the SAT-Math score, and also on those aspects of the OPI which contribute to a high score on Masculine Role. There also appear to be important differences between English majors and Political Science-Economics majors on Nonauthoritarianism and Scholastic Orientation. However, these differences in student characteristics are not clearly or consistently related to differences in environmental press or to differences in the attainment of various objectives.

All three segments of the college community--administrative, academic, and student--contribute about equally to the formation of its strong environmental press toward intellectual, humanistic, esthetic goals; toward scientific, independent goals; and toward the virtual absence of press in the practical, interpersonal status-oriented direction. With respect to the friendly, group welfare aspect of the campus, however, characteristics of the students, extracurricular programs, and informal student activities account for most of the college press in this direction.

TABLE VII-1. SWARTHMORE: CCA MEAN SCORES FOR SUBGROUPS AND TOTAL COLLEGE

Scale	Subgroups						Total College	
	English (N=19)	Math-Physics (N=17)	Psychology (N=8)	History (N=14)	Poli.Sci.-Economics (N=11)	Biological Sciences (N=16)	All Students (N=85)	Average of Subgroups
Intellectual Humanistic Esthetic								
Ad	11.68	11.82	12.38	11.86	11.09	11.19	11.64	11.50
Ac	12.53	10.88	13.00	12.36	11.09	11.19	11.78	11.84
St	12.68	11.94	11.75	12.64	10.27	11.94	11.99	11.87
Total	36.89	34.65	37.13	36.86	32.45	34.31	35.40	35.21
Friendly Group Welfare								
Ad	6.00	6.76	5.88	7.29	7.73	6.19	6.61	6.64
Ac	7.74	8.35	6.25	9.21	9.73	8.06	8.28	8.22
St	7.58	8.82	7.75	8.71	10.64	10.00	8.88	8.92
Total	21.32	23.94	19.88	25.21	28.09	24.25	23.77	23.78
Scientific Independent								
Ad	10.89	10.18	10.25	10.43	10.82	10.44	10.52	10.50
Ac	10.74	11.00	11.63	10.36	10.09	12.31	11.02	11.02
St	9.21	9.94	9.75	9.29	9.82	9.38	9.53	9.57
Total	30.84	31.12	31.63	30.07	30.73	32.13	31.07	31.09
Practical Status-oriented								
Ad	4.05	4.18	5.25	4.21	4.55	4.56	4.38	4.47
Ac	2.53	4.53	4.00	2.21	2.91	3.81	3.31	3.33
St	3.16	3.12	2.50	3.64	5.09	3.00	3.39	3.42
Total	9.74	11.82	11.75	10.07	12.55	11.38	11.07	11.22

TABLE VII-2. SWARTHMORE: CCA STANDARD DEVIATIONS FOR SUBGROUPS AND TOTAL COLLEGE

Scale	Subgroups						Total College	
	English	Math-Physics	Psychology	History	Poli.Sci.-Economics	Biological Sciences	All Students	Average of Subgroups
Intellectual Humanistic Esthetic								
Ad	1.08	1.79	.99	1.81	1.24	1.01	1.44	1.32
Ac	1.98	2.19	.87	1.54	3.26	1.94	2.24	1.95
St	1.26	1.80	1.85	1.63	2.56	1.43	1.89	1.76
Total	2.95	4.78	2.98	4.17	5.19	3.22	4.27	3.88
Friendly Group Welfare								
Ad	1.26	1.48	1.27	1.94	2.42	1.84	1.84	1.70
Ac	1.25	2.06	2.86	2.21	1.76	1.56	2.12	1.95
St	1.96	2.99	2.11	2.84	2.90	2.00	2.72	2.47
Total	2.60	4.93	4.68	5.94	5.85	3.56	5.16	4.50
Scientific Independent								
Ad	1.52	.92	1.71	1.12	1.11	1.77	1.41	1.36
Ac	2.00	2.06	1.80	1.63	1.83	1.16	1.93	1.75
St	1.40	2.29	2.33	2.22	1.99	2.26	2.09	2.08
Total	3.08	3.55	3.00	3.39	3.89	3.14	3.41	3.34
Practical Status-oriented								
Ad	1.32	1.04	1.09	1.26	1.30	1.22	1.26	1.21
Ac	1.76	1.46	1.22	1.52	1.16	1.91	1.80	1.51
St	1.78	1.60	1.50	1.59	2.78	1.70	1.98	1.83
Total	3.43	2.96	2.82	2.40	4.74	2.80	3.39	3.19

TABLE VII-3

SWARTHMORE: DIFFERENCES BETWEEN SUBGROUP MEANS AND COMPOSITE MEAN ON CCA SCALES

Scale	Subgroups					
	English (N=19)	Math-Physics (N=17)	Psychology (N=8)	History (N=14)	Poli.Sci. Economics (N=11)	Biological Sciences (N=16)
Intellectual Humanistic Esthetic						
Ad	.04	.18	.74	.22	- .55	- .45
Ac	.75	- .90	1.22*	.58	- .69	- .59
St	.69	- .05	- .24	.65	-1.72	- .05
Total	1.49	- .75	1.73	1.46	-2.95	-1.09
Friendly Group Welfare						
Ad	- .61	.15	- .73	.68	1.12	- .42
Ac	- .54	.07	-2.03	.93	1.45*	- .22
St	-1.30*	- .06	-1.13	- .17	1.76	1.12
Total	-2.46**	.16	-3.90	1.43	4.31*	.47
Scientific Independent						
Ad	.37	- .34	- .27	- .09	.30	- .08
Ac	- .28	- .02	.61	- .66	- .93	1.29**
St	- .32	.41	.22	- .24	.29	- .15
Total	- .23	.05	.56	-1.00	- .34	1.06
Practical Status-oriented						
Ad	- .33	- .20	.87	- .17	.17	.18
Ac	- .78	1.22**	.69	-1.10*	- .40	.50
St	- .23	- .27	- .89	.25	1.70	- .39
Total	-1.33	.75	.68	-1.00	1.48	.31

NOTE: * sign indicates $p < .05$; ** sign indicates $p < .01$

TABLE VII-4

SWARTHMORE: DIFFERENCES BETWEEN SUBGROUP MEANS AND THE COLLEGE MEAN ON OBJECTIVES, SATISFACTIONS, AND GRADES

	N	OBJ 1	OBJ 2	OBJ 3	OBJ 4	OBJ 5	OBJ 6	OBJ 7	OBJ 8	OBJ 9	OBJ 10	OBJ 11	SAT 1	SAT 2	SAT 3	GRADES
College	88	1.80	3.17	1.64	2.00	2.17	1.72	2.77	1.73	2.19	1.91	2.48	1.35	1.59	1.58	2.99
English	19	.22	-.25	-.36	.00	.28	.14	-.28	.10	.24	.33	-.89**	.07	-.41*	.19	-.22
Math-Physics	17	-.08	.58*	.46**	-.06	-.18	-.40	-.17	-.03	-.52*	-.27	.89**	.11	-.04	-.01	.75*
Psychology	9	.13	-.05	.08	.22	.17	.05	-.36	.06	.08	.02	.26	-.09	.03	-.42	-.45
History	15	.07	-.36*	-.29	-.13	-.03	-.01	.17	-.27	.12	.11	-.59*	-.12	.12	.05	.35
Poli.Sci.-Economics	14	-.34	-.26	-.15	.14	.03	.43*	.56*	.23	.48*	.05	-.81**	-.01	.16	.01	-.51
Biological Sciences	15		.30	.37*	-.07	-.30	-.15	-.23	-.14	-.34	-.09	1.08**	.02	-.01	-.22	-.28

NOTE: * sign indicates $p < .05$
** sign indicates $p < .01$

NOTE: In the top row of this table, a low score indicates a favorable rating. In the rest of the table the minus (-) signs have their customary meaning of "less favorable."

TABLE VII-5

SWARTHMORE: RANK ORDER OF ESTIMATED PROGRESS TOWARD OBJECTIVES

	Rank	Total	English	Math-Physics	Psychology	History	Poli.Sci.-Economics	Biological Sciences
Highest	1	3	1	3	3	1	6	3
	2	6	6	11	1	6	8	11
	3	8	10	8	6	10	9	1
	4	1	8	1	8	3	3	6
	5	10	5	4	4	8	4	8
	6	4	9	6	10	9	10	10
	7	5	3	10	5	4	1	4
	8	9	4	5	9	5	5	5
	9	7	7	2	11	7	7	9
	10	11	11	9	7	11	11	2
Lowest	11	2	2	7	2	2	2	7

NOTE: Bracketed numbers indicate tied ranks

TABLE VII-6

SWARTHMORE: ANALYSIS OF SIGNIFICANT RELATIONSHIPS BETWEEN ENVIRONMENT AND ATTAINMENT

IHE		W		SI		PS	
Press	Progress 1, 4, 10	Press	Progress 5, 7	Press	Progress 3, 8, 11	Press	Progress 2
Psy (Ac) +	+	PS-E (Ac) +	PS-E (7) +	+	M-P (3) +	M-P (Ac) +	M-P (2) +
		PS-E (Tot.) +			M-P (11) +	Hist (Ac) -	Hist (2) -
		Engl (St) -	-	B.S. (Ac) +	B.S. (3) +		
		Engl (Tot.) -			B.S. (11) +		
				-	PS-E (11) -		
				-	Engl (11) -		
				-	Hist (11) -		

SUMMARY OF RELATIONSHIPS

Environment and Attainment both significant and consistent	4
Environment significant and Attainment consistent	1
Attainment significant and Environment consistent	4
Environment significant and Attainment neutral	1
Environment significant but Attainment inconsistent	0
Attainment significant but Environment inconsistent	0
Environment and Attainment both significant but inconsistent	0

NOTE: B.S. = Biological Sciences; M-P = Math-Physics; PS-E = Political Science-Economics

TABLE VII-7

SWARTHMORE: "SIGN TEST" ANALYSIS OF THE RELATIONSHIPS BETWEEN ENVIRONMENT AND ATTAINMENT

Subgroups	IHE		W		SI		PS	
	Press	Progress 1, 4, 10	Press	Progress 5, 7	Press	Progress 3, 8, 11	Press	Progress 2
English	+	+ o +	⊖	+ -	-	- + ⊖	-	-
Math-Physics	-	- - -	-	- -	+	⊕ - ⊕	⊕	⊕
Psychology	⊕	+ + +	-	+ -	+	+ + +	+	-
History	+	+ - +	+	- +	-	- - ⊖	⊖	⊖
Poli.Sci.-Economics	-	- + +	⊕	+ ⊕	-	- + ⊖	+	-
Biological Sciences	-	o - -	-	- -	⊕	⊕ - ⊕	+	+

SUMMARY OF RELATIONSHIPS

Pattern	No. of Examples	
Fully consistent	11	18
Mainly consistent	7	
Neutral	3	
Mainly inconsistent	1	3
Fully inconsistent	2	

NOTE: ○ indicates a significant difference from the composite mean.

TABLE VII-8

SWARTHMORE: DIFFERENCES BETWEEN ADMINISTRATIVE, ACADEMIC, AND STUDENT SUBSCORES (66%+ METHOD)

CCA Scores Based on 66%+ Consensus

	IHE	W	SI	PS
Ad	12	4	10	2
Ac	11	7	11	0
St	12	10	8	1
Total	35	21	29	3

Differences

		Swarthmore	Composite of Nine Colleges
IHE	Ad vs. Ac	1	.1
	Ad vs. St	0	2.2
	Ac vs. St	-1	2.1
W	Ad vs. Ac	-3	0
	Ad vs. St	-6	-1.3
	Ac vs. St	-3	-1.3
SI	Ad vs. Ac	-1	- .2
	Ad vs. St	2	2.8
	Ac vs. St	3	3.0
PS	Ad vs. Ac	2	.3
	Ad vs. St	1	-1.1
	Ac vs. St	-1	-1.4

NOTE: Minus (-) signs indicate that the first item of the pair is lower than the second.

TABLE VII-9

SWARTHMORE: MEAN SCORES ON APTITUDE, PERSONALITY, AND ATTITUDE TESTS

Subgroups	Tests														
	SAT-V	SAT-M	TI	TO	ES	CO	AU	DS	IE	SF	SI	RL	SM	MF	RS
English	654	605	45	21	17	16	31	44	39	34	25	22	116	59	76
Math-Physics	690	733	39	25	12	15	30	44	32	34	29	18	100	70	74
History	678	621	43	20	15	15	32	44	34	35	25	21	106	55	70
Poli.Sci.-Economics	647	666	37	16	14	14	26	35	33	30	20	16	93	56	74
Biological Sciences	662	664	40	22	15	14	31	41	32	27	20	19	104	60	78

Key: SAT-V = Scholastic Aptitude Test--Verbal
SAT-M = Scholastic Aptitude Test--Mathematical
TI = Thinking Introversion
TO = Theoretical Orientation
ES = Estheticism
CO = Complexity
AU = Autonomy
DS = Developmental Status
IE = Impulse Expression
SF = Schizoid Functioning
SI = Social Introversion
RL = Religious Liberalism
SM = Social Maturity
MF = Masculinity-Femininity
RS = Repression-Suppression

NOTE: Among the Psychology subgroup there were insufficient cases to be included in this table.

CHAPTER VIII

ANTIOCH

Located in Yellow Springs, Ohio, Antioch College is probably best known for two unusual features: its work-study program in which students alternate quarters of study on campus with periods of work on regular jobs, and its community government in which students, faculty, and administrators all participate in the management of the college. It is also, of course, widely known as belonging in the company of academically elite liberal arts colleges.

The 119 CCA responses from Antioch were sorted into ten groups of academic majors--Education, Engineering, Business, Social Science, Psychology and Sociology, History, Literature and Languages, Art-Music-Drama, Math-Physics, and Biology-Chemistry. Three of these groups--Education, Engineering, and Business--can be considered as professional programs. The others are traditional departments (or in some cases presumably related departments) in liberal arts. Math and Physics have been combined into one group for purposes of the analysis. So have Biology and Chemistry. Literature majors have been combined with Language majors into a single group. Psychology and Sociology have also been combined. The other combination group, Social Sciences, consists mainly of majors in Economics or Political Science. Ideally, one would not make any of these combinations. On the academic subscales, the Math majors are reporting what is characteristic of the Math department and the Physics majors are reporting what is characteristic of the Physics department. But there were not enough Math majors nor enough Physics majors to treat them as separate subgroups. Physics majors, however, are necessarily involved in considerable mathematics instruction and hence the two groups share, at least to some extent, a similar academic atmosphere. All combination groups, then, are a compromise, forced by the choice between eliminating a group entirely because it is too small, or combining it with some presumably related group in order to make a single group which is at least a little larger. Some of the combinations can be justified with more confidence than others; but all of the combinations have, in the writer's opinion, at least some reasonable justification. Certainly no groups which were thought to be unrelated or only slightly related have been combined into a single group, either in the Antioch sample or any of the other colleges. For testing the major hypotheses of the research, the consequence of all such compromises is conservative, making it less likely rather than more likely that significant differences between subgroups will be obtained.

Environmental Scores

Table VIII-1 reports the mean scores on all of the CCA scales for all of the Antioch subgroups. The corresponding standard deviations are shown in Table VIII-2. Antioch, like Bennington and Swarthmore, scores very high on the intellectual, humanistic, esthetic dimension and very low on the practical, status-oriented dimension. It is also high on the scientific, independent dimension and about average on the friendly, group welfare dimension.

Differences between the subgroup means and the composite for the college are shown in Table VIII-3. There are 160 differences recorded in this table. Only five of them are significant beyond the 5 percent level, a number somewhat less than would be expected merely by chance. On the 15-item scales only one subgroup differs from the composite by as much as two points. On the 45-item scales no subgroup differs from the composite by as much as three points.

Moreover, on the various 15-item scales no two subgroups differ from one another by more than three points. On the academic subscore of the IHE scale the difference between the Literature-Languages group and the Education group is exactly three points; and on the student subscore of the SI scale the difference between Math-Physics and Education is 2.97 points. A number of differences smaller than this would be statistically significant; but the writer has arbitrarily set a more rigorous criterion of three points as defining a degree of difference which probably has some educational importance. On the 45-item total SI score, the difference between Education and History is 5.61 points. No other two subgroups differ by as much as five points on any total score scale.

Attainment Scores

Differences between subgroups and the composite in ratings of progress toward the attainment of various objectives are shown in Table VIII-4. There are no differences on Objectives 4, 6, and 9--philosophy, personal development, and communication--between any of the subgroups. The science-oriented subgroups--Engineering, Math-Physics, and Biology-Chemistry--each indicated significantly above-average progress toward Objective 11 (understanding science and technology). The Education subgroup expressed significantly above-average progress toward Objectives 2 and 5 (vocational training and social development). It is interesting to note that two of the subgroups failed to deviate from the composite on any of the objectives--Business and Psychology-Sociology.

In the ratings of satisfactions with college life, the Biology-Chemistry and the Education subgroups are each above average on one of the three items. In grades, the Business subgroup is significantly below the college average.

The rank order of the attainment ratings in each of the subgroups is shown in Table VIII-5. For the college as a whole, progress toward personal and social development, understanding different philosophies and ways of life, appreciation of the arts, and critical thinking was judged to be greatest, in the order listed. As in the other colleges, the ratings for Objective 11 (understanding science and technology) are typically high in the several science subgroups--Engineering, Math-Physics, and Biology-Chemistry--and typically low in all other subgroups.

Relationships Between Environment and Attainment

The juxtaposition of significant deviations in press with significant deviations in progress toward relevant objectives is portrayed in Table VIII-6. There are 14 sets of these relationships in which either an environmental press score or the attainment ratings of a relevant objective differed significantly from the college composite. The general summary of these relationships listed at the bottom of the table indicates that environment and attainment are congruent in ten cases, and incongruent in four cases.

When all of the relationships between environment and attainment are summarized as being either above or below the college composite, as shown in Table VIII-7, there are 20 consistent cases and 16 inconsistent cases.

Differences Between Administrative, Academic, and Student Subscores

The relative influence of administrative, academic, and student sources of press is shown in Table VIII-8. In the Intellectual, Humanistic, Esthetic score of the college, the least contribution is made by items from the academic scale. Ordinarily, this subscale contributes most to the total IHE score. At Antioch, however, both the administrative and the student aspects of the environment contribute more than the academic aspects to the total intellectual, humanistic, esthetic emphasis of the college. Relative to the other colleges the Friendly, Group Welfare score at Antioch is a little more strongly influenced by the contribution of the academic subscale than by either the administrative or the student subscales. In the typical case, the student subscale contributes most to the total W score. On the other scales Antioch is not notably different from the composite of the nine colleges.

Summary

The picture which emerges from the foregoing analysis shows Antioch to be more homogeneous than one might expect in a college having such a variety of academic specialties and professional programs. Even when each subgroup is describing its own academic press--the academic subscores--only one group (Literature and Languages) is significantly different from the college composite on the IHE dimension, no group differs significantly from the college composite on the W dimension, only one group (Psychology-Sociology) differs from the total on the SI dimension, and only one group (Business) differs from the total on the PS dimension. When each group of academic majors is describing its own circle of student friends, the only significant difference between a group and the composite of all groups is the History majors on the SI dimension. And when each group is describing the administrative aspects of the college in general, all perceive the college in almost identical fashion. Despite its variety of groups, then, the Antioch environment seems to make pretty much the same impression on all of the students, operating as a whole rather than as a collection of parts which differ from one another.

TABLE VIII-1. ANTIOCH: CCA MEAN SCORES FOR SUBGROUPS AND TOTAL COLLEGE

Scale	Subgroups										Total College	
	Educ. (N=12)	Engrg. (N=8)	Bus. (N=11)	Soc. Sci. (N=14)	Psych.-Sociol. (N=15)	Hist. (N=12)	Lit.-Lang. (N=12)	Art Music Drama (N=11)	Math-Phys. (N=11)	Biol.-Chem. (N=12)	Students (N=119)	Average of Subgroups
Intellectual Humanistic Esthetic												
Ad	12.62	13.63	13.00	12.79	13.00	12.92	12.67	13.18	13.45	13.25	13.02	13.05
Ac	10.15	10.63	10.64	10.64	10.73	12.08	13.25	11.00	11.18	10.67	11.09	11.10
St	10.92	12.00	11.18	10.79	12.13	11.33	12.25	12.45	11.00	11.92	11.58	11.60
Total	33.69	36.25	34.82	34.21	35.87	36.33	38.17	36.64	35.64	35.83	35.69	35.75
Friendly Group Welfare												
Ad	7.00	6.88	7.00	7.14	6.60	7.00	7.75	7.46	7.18	7.67	7.15	7.16
Ac	11.08	11.63	10.91	10.64	10.40	10.33	10.17	9.82	9.27	10.50	10.45	10.48
St	9.08	9.75	8.09	8.64	8.93	9.00	9.00	9.45	8.55	10.08	9.03	9.06
Total	27.15	28.25	26.00	26.43	25.93	26.33	26.92	26.64	25.00	28.25	26.64	26.70
Scientific Independent												
Ad	10.38	10.38	11.00	10.50	10.67	11.08	11.00	10.45	10.91	10.50	10.69	10.69
Ac	9.08	10.25	9.09	10.71	11.40	11.33	9.75	9.00	10.55	10.50	10.21	10.17
St	6.85	9.25	8.18	8.00	8.07	9.50	8.25	7.64	9.82	7.92	8.29	8.35
Total	26.31	29.88	28.27	29.21	30.13	31.92	29.00	27.09	31.27	28.92	29.18	29.21
Practical Status-oriented												
Ad	2.46	2.38	2.18	2.00	2.33	2.58	2.33	3.00	2.27	3.33	2.48	2.49
Ac	2.31	4.25	4.64	3.50	2.73	3.58	2.50	2.36	2.36	3.33	3.11	3.15
St	3.08	3.38	3.09	3.50	2.73	3.00	3.75	3.09	2.18	4.17	3.19	3.20
Total	7.85	10.00	9.91	9.00	7.80	9.17	8.58	8.45	6.82	10.83	8.78	8.84

TABLE VIII-2. ANTIOCH: CCA STANDARD DEVIATIONS FOR SUBGROUPS AND TOTAL COLLEGE

Scale	Subgroups										Total College	
	Educ.	Engrg.	Bus.	Soc. Sci.	Psych.-Sociol.	Hist.	Lit.-Lang.	Art Music Drama	Math-Phys.	Biol.-Chem.	All Students	Average of Subgroups
Intellectual Humanistic Esthetic												
Ad	1.50	1.41	1.13	1.47	1.50	.95	2.05	1.47	.78	1.36	1.44	1.36
Ac	2.98	2.23	2.71	3.31	2.52	2.33	1.79	1.86	2.33	3.63	2.80	2.57
St	2.70	1.41	2.08	2.93	2.19	1.49	1.53	2.23	1.65	1.75	2.19	2.00
Total	5.84	3.23	3.69	6.57	4.39	3.75	3.76	3.82	3.80	4.43	4.71	4.33
Friendly Group Welfare												
Ad	.96	.60	1.28	1.60	1.45	1.35	.83	.98	1.27	1.18	1.26	1.15
Ac	1.82	1.58	1.50	1.87	2.36	1.97	1.95	2.82	1.96	2.47	2.16	2.03
St	2.23	2.17	1.88	2.16	1.73	2.16	1.41	3.06	2.06	2.33	2.21	2.12
Total	3.39	3.38	3.25	4.07	4.36	3.30	2.84	4.70	3.57	4.75	3.95	3.76
Scientific Independent												
Ad	1.44	1.22	1.48	1.45	1.40	1.66	1.91	1.97	1.44	1.66	1.60	1.56
Ac	3.00	1.56	2.71	1.44	1.45	1.75	2.38	2.59	2.61	1.71	2.35	2.12
St	3.06	1.71	1.85	2.17	2.02	1.32	1.59	2.64	1.59	2.36	2.28	2.03
Total	6.35	3.10	4.11	3.47	3.79	3.25	3.74	4.98	3.41	3.95	4.47	4.02
Practical Status-oriented												
Ad	1.01	.86	1.64	1.13	1.14	.86	.94	1.04	1.66	1.37	1.26	1.17
Ac	1.64	1.39	1.97	1.40	2.34	2.63	1.80	1.92	1.23	1.25	1.96	1.76
St	1.86	1.58	1.98	2.06	1.44	1.53	1.83	1.62	2.04	2.34	1.92	1.82
Total	3.59	2.83	2.91	3.30	3.64	3.85	3.23	3.37	3.38	3.74	3.60	3.38

TABLE VIII-3. ANTIOCH: DIFFERENCES BETWEEN SUBGROUP MEANS AND COMPOSITE MEAN ON CCA SCALES

Scale	Subgroups									
	Educ. (N=13)	Engrg. (N=8)	Bus. (N=11)	Soc. Sci. (N=14)	Psych.-Sociol. (N=15)	Hist. (N=12)	Lit.-Lang. (N=12)	Art Music Drama (N=11)	Math-Phys. (N=11)	Biol.-Chem. (N=12)
Intellectual Humanistic Esthetic										
Ad	-.40	.61	-.02	-.23	-.02	-.10	-.35	.16	.43	.23
Ac	-.94	-.46	-.45	-.45	-.36	.99	2.16**	-.09	.09	-.42
St	.66	.42	-.40	-.79	.55	-.25	.67	.87	-.58	.34
Total	-2.00	.56	-.87	-1.48	.18	.64	2.48	.95	-.05	.14
Friendly Group Welfare										
Ad	-.15	-.27	-.15	-.01	-.55	-.15	.60	.21	.03	.52
Ac	.63	1.18	.46	.19	-.05	-.12	-.28	-.63	-1.18	.05
St	.05	.72	-.94	-.39	-.10	-.03	-.03	.42	-.48	1.05
Total	.51	1.61	-.64	-.21	-.71	-.31	.28	.00	-1.64	1.61
Scientific Independent										
Ad	-.31	-.31	.31	-.19	-.02	.39	.31	-.24	.22	-.19
Ac	-1.13	.04	-1.12	.50	1.19*	1.12	-.46	-1.21	.34	.29
St	-1.44	.96	-.11	-.29	-.22	1.21*	-.04	-.65	1.53	-.37
Total	-2.87	.70	-.91	.03	.95	2.74*	-.18	-2.09	2.09	-.26
Practical Status-oriented										
Ad	-.02	-.10	-.30	-.48	-.15	.10	-.15	.52	-.21	.85
Ac	-.80	1.14	1.53*	.39	-.38	.47	-.61	-.75	-.75	.22
St	-.11	.19	-.10	.31	-.46	-.19	.56	-.10	-1.01	.98
Total	-.93	1.22	1.13	.22	-.98	.39	-.20	-.33	-1.96	2.05

NOTE: * sign indicates $p < .05$; ** sign indicates $p < .01$

TABLE VIII-4

ANTIOCH: DIFFERENCES BETWEEN SUBGROUP MEANS AND THE COLLEGE MEAN ON OBJECTIVES, SATISFACTIONS, AND GRADES

	N	OBJ 1	OBJ 2	OBJ 3	OBJ 4	OBJ 5	OBJ 6	OBJ 7	OBJ 8	OBJ 9	OBJ 10	OBJ 11	SAT 1	SAT 2	SAT 3	GRADES
College	114	1.91	2.33	2.05	1.85	1.82	1.59	2.18	1.90	2.06	1.87	2.24	1.46	1.98	1.97	3.11
Engrg.	8	-.22	.08	.42	-.03	-.56	-.16	-.07	-.48	.06	-.38	.74**	-.17	-.27	-.38	-.39
Business	10	.21	.43	.25	-.05	.22	-.11	.08	-.10	.16	-.03	-.26	-.14	-.12	-.13	-.79*
Education	13	-.09	.56*	.20	.15	.51*	.21	.18	.21	-.17	.10	-.14	.23	.52*	.12	.26
Math-Phys.	11	-.18	.24	.14	-.06	.00	-.14	-.46	-.10	-.30	.14	.69*	.19	.07	-.03	.38
Biol.-Chem.	12	-.09	.33	.13	-.07	-.18	-.08	-.49	-.10	-.02	-.05	.57*	.29*	.23	.30	-.14
Lit.-Lang.	9	.47*	-.34	-.06	-.15	.15	.26	.29	-.10	-.05	.31	-.32	-.32	-.58	-.25	.00
Soc. Sci.	12	-.26	.00	.05	-.15	-.18	.09	.68**	.15	-.02	-.55*	-.26	.04	.06	-.03	-.06
Psych.-Soc.	14	-.09	.12	-.16	.21	.32	.09	.25	-.17	-.08	-.27	-.12	-.18	.27	.33	-.10
History	12	.16	-.85**	-.20	-.15	-.43	-.16	.10	.48*	.23	.29	-.26	.13	.06	.14	-.06
Art-Music-Drama	10	-.19	-.17	-.75*	.05	.02	-.01	-.22	-.10	.06	.47*	-.26	.16	-.32	-.13	.41

NOTE: * sign indicates $p < .05$; ** sign indicates $p < .01$

In the top row of this table, a low score indicates a favorable rating.
In the rest of the table the minus (-) signs have their customary meaning of "less favorable."

TABLE VIII-5

ANTIOCH: RANK ORDER OF ESTIMATED PROGRESS TOWARD OBJECTIVES

	Rank	Total	Engrg.	Bus.	Educ.	Math-Phys.	Biol.-Chem.	Lit.-Lang.	Soc. Sci.	Psych.-Sociol.	Hist.	Art Music Drama
Highest	1	6	11	5	5	11	6	6	6	5	8	10
	2	5	3	1	6	6	11	1	7	6	10	6
	3	4	6	6	8	10	3	10	8	4	1	4
	4	10	4	3	4	5	4	5	3	7	6	5
	5	8	9	2	2	3	10	7	4	1	9	8
	6	1	1	4	10	4	1	4	5	8	4	9
	7	3	2	9	3	8	2	8	9	9	7	1
	8	9	7	10	1	1	5	3	1	10	3	7
	9	7	10	8	7	2	8	9	2	2	5	2
	10	2	5	7	9	9	9	11	10	3	11	11
	11	11	8	11	11	7	7	2	11	11	2	3

NOTE: Bracketed numbers indicate tied ranks.

TABLE VIII-6

ANTIOCH: ANALYSIS OF SIGNIFICANT RELATIONSHIPS BETWEEN ENVIRONMENT AND ATTAINMENT

IHE		W		SI		PS	
Press	Progress 1, 4, 10	Press	Progress 5, 7	Press	Progress 3, 8, 11	Press	Progress 2
LL (Ac) +	LL (10) +	+	Ed. (5) +	Hist. (St) +		Bus. (Ac) +	+
+	AMD (10) +	-	SS (7) +	Hist. (Tot.) +	Hist. (8) +	-	Ed. (2) +
-	SS (10) -			Psy.-Soc. (Ac) +	-	+	Hist. (2) -
				+	Engr. (11) +		
				+	M & P (11) +		
				+	B & C (11) +		
				-	AMD (3) -		

SUMMARY OF RELATIONSHIPS

Environment and Attainment both significant and consistent	2	10
Environment significant and Attainment consistent	1	
Attainment significant and Environment consistent	7	
Environment significant and Attainment neutral	0	
Environment significant but Attainment inconsistent	1	4
Attainment significant but Environment inconsistent	3	
Environment and Attainment both significant but inconsistent	0	

NOTE: AMD = Art-Music-Drama; B & C = Biol.-Chem.; Ed. = Education; LL = Lit.-Lang.; M & P = Math-Physics; SS = Soc. Sci.

TABLE VIII-7

ANTIOCH: "SIGN TEST" ANALYSIS OF THE RELATIONSHIPS BETWEEN ENVIRONMENT AND ATTAINMENT

Subgroups	IHE		W		SI		PS	
	Press	Progress 1, 4, 10	Press	Progress 5, 7	Press	Progress 3, 8, 11	Press	Progress 2
Education	-	- + +	+	⊕ +	-	+ + -	-	⊕
Engineering	+	- - -	+	- -	+	+ - ⊕	+	+
Business	-	+ - -	-	+ +	-	+ - -	⊕	+
Social Science	-	- - ⊖	-	- ⊕	+	+ + -	+	o
Psychology-Sociology	+	- + -	-	+ +	⊕	- - -	-	+
History	+	+ - +	-	- +	⊕	- ⊕ -	+	⊖
Literature-Language	⊕	⊕ - +	+	+ +	-	- - -	-	-
Art-Music-Drama	+	- + ⊕	o	+ -	-	⊖ - -	-	-
Math-Physics	-	- - +	-	o -	+	+ - ⊕	-	+
Biology-Chemistry	+	- - -	+	- -	-	+ - ⊕	+	+

SUMMARY OF RELATIONSHIPS

Pattern	No. of Examples	
Fully consistent	10	20
Mainly consistent	10	
Neutral	4	
Mainly inconsistent	5	16
Fully inconsistent	11	

NOTE: ○ indicates a significant difference from the composite mean.

TABLE VIII-8

ANTIOCH: DIFFERENCES BETWEEN ADMINISTRATIVE, ACADEMIC, AND STUDENT SUBSCORES (66%+ METHOD)

CCA Scores Based on 66%+ Consensus

	IHE	W	SI	PS
Ad	13	7	10	0
Ac	9	9	9	1
St	13	8	6	1
Total	35	24	25	2

Differences

		Antioch	Composite of Nine Colleges
IHE	Ad vs. Ac	4	.1
	Ad vs. St	0	2.2
	Ac vs. St	-4	2.1
W	Ad vs. Ac	-2	0
	Ad vs. St	-1	-1.3
	Ac vs. St	1	-1.3
SI	Ad vs. Ac	1	- .2
	Ad vs. St	4	2.8
	Ac vs. St	3	3.0
PS	Ad vs. Ac	-1	.3
	Ad vs. St	-1	-1.1
	Ac vs. St	0	-1.4

NOTE: Minus (-) signs indicate that the first item of the pair is lower than the second.

CHAPTER IX

ST. OLAF

St. Olaf College in Northfield, Minnesota, has strong Norwegian roots. The tall trees and rugged stone buildings on its hilly campus, its Lutheran music and church affiliation, its library collections of Norwegian-American history, all reflect this tradition. Its student body, numbering about 1800, comes mainly from Minnesota. This regional and religious character impresses the casual visitor; but the curriculum of the college itself is more diverse, with Nursing and Home Economics, for example, than one finds in smaller liberal arts colleges; and although the student body is scholastically selective it is less so than Bennington, Swarthmore, or Antioch, so that the potential for finding academic and student subcultures which differ from the college as a whole is greater than in the colleges that have been described up to this point.

Environmental Scores

A friendly, group welfare emphasis, together with an intellectual, humanistic, esthetic emphasis are the strongest characteristics of the St. Olaf environment. This is combined with a ranking somewhat below the average of the nine colleges on the scientific, independent variable, and somewhat above the average on the practical, status-oriented variable. These scores for the college as a whole and for each of the academic subgroups within the college are shown in Table IX-1. Standard deviations are in Table IX-2; and the differences between all subgroup means and the composite for the college are noted in Table IX-3. From this last table one can see that 20 of these differences are marked as being significant at the 5 percent or the 1 percent level. From the total of 112 comparisons in the table, one might expect five or six to show a significant deviation by chance. The number of significant differences actually obtained is therefore at least three times greater than chance expectations.

The location of these significant differences offers several clues in looking for some general pattern of variation. For example, the science group (Biology and Chemistry majors) sees the environment as less humanistic and less friendly than what is typically ascribed to the college. The Social Sciences group also sees the environment as less welfare oriented than does the typical or composite group. The Music, Art, Speech majors are opposite to the science group in their perception of the humanistic press of the college. And both the Music, Art, Speech majors and the Nursing majors see the college as much stronger in its welfare emphasis than either the Science or Social Sciences groups.

A clear picture can be seen by looking for subgroups which differ from one another (rather than from the composite) by five points or more on the various total scores. All differences of this size are statistically significant. In this comparison, Social Sciences and Biology-Chemistry are both more than five points lower than Music-Art-Speech, History, and Home Economics on the Intellectual, Humanistic, Esthetic total score. In addition, Social Sciences and Biology-Chemistry are both more than five points lower than Music-Art-Speech, Home Economics, and Nursing on the Friendly, Group Welfare total score.

On the subscales (the 15-item scales) the largest number of examples of differences greater than three points between any two groups also involve the Music-Art-Speech and Home Economics groups on the one hand and the Social Sciences and Biology-Chemistry groups on the other. These differ by more than three points on the student subscale of the IHE variable. On the administrative subscales there is only one example of a three-point or greater difference between subgroups--Nursing is higher than Social Sciences on the Friendly, Group Welfare scale. On the academic subscales there is again only one example of a three-point or greater difference--Home Economics is higher than English and Languages on the Scientific, Independent variable.

Attainment Scores

The extent to which the various subgroups differ from the college composite in their mean ratings of progress toward the attainment of various objectives is shown in Table IX-4. The Social Sciences subgroup is not included in these comparisons because of insufficient data. There were only six students in this group and three of them failed to respond to the rating scales. This is unfortunate especially because the Social Sciences group, small as it was, differed in several respects from other groups and from the college composite in its perception of the environment. Of the six subgroups for which data are shown, none differs significantly from the college composite in its mean ratings of progress toward Objectives 1, 3, 5, 6, 7, and 9. Most of the differences, as is true in most of the colleges, are in respect to Objectives 2 and 11 (vocational training and understanding science and technology).

On the three items dealing with satisfactions, there is only one example of a significant difference: the Nursing subgroup has a higher rating on the second item. It is interesting to note, however, that the Nursing group gives above-average ratings to all three satisfaction items, and that the Chemistry-Biology group gives below-average ratings to all three of these items. These two groups were also, respectively, significantly above and below the college composite in their scores on the CCA total scale for friendly, group welfare emphasis. With respect to college grades, no subgroup differed significantly from the composite.

When the objectives are listed in rank order of attainment, Table IX-5, the highest on the list is Objective 10 (appreciation and enjoyment of art, music, and literature). Moreover, this objective ranks among the top four in every subgroup, as well as being at the top for the college as a whole. Local identification with and pride in the nationally famous St. Olaf A Capella Choir may account to some extent for this result.

Relationships Between Environment and Attainment

Relationships between the environmental emphases and the sense of progress toward the attainment of relevant objectives are shown in Tables IX-6 and IX-7. There are eight examples, in Table IX-6, of a significant deviation in the press scores; and of these three are paralleled by a significant difference in the attainment ratings, four others are paralleled by a consistent but not significant relationship, and one is inconsistent. Considering only the direction of relationships, as in Table IX-7, one finds 15 consistent examples and nine inconsistent ones, and, at the extremes, 11 fully consistent cases compared with four fully inconsistent ones.

Differences Between Administrative, Academic, and Student Subscores

The relative contributions of the administrative, academic, and student subscales to the general environment of the college are shown in Table IX-8. The college profile, based on the 66%+ method of scoring, is seen to be similar to that previously reported, based on mean scores. The most notable feature is the score of 15 on the student subscale of the Friendly, Group Welfare dimension, indicating that every item in this scale was judged to be characteristic of the college. The relative contributions of the three sources of press at St. Olaf are similar to the composite of all the colleges on the SI and PS dimensions. On the W variable, the proportionately higher contribution of the student subscore is clear, especially in relation to the academic subscore. The contribution of the student subscore to the IHE emphasis of the college is especially notable. Typically, the administrative and academic scores are two points higher than the student scores; but at St. Olaf the difference is in the opposite direction, with the student subscore being four points higher than the administrative and one point higher than the academic.

Summary

In the first three colleges reported, taken as a group, significant differences between the perceived press of various academic or student subcultures and that of the college as a whole occurred with no more than chance frequency, leading to the conclusion that the environments of these colleges were generally pervasive rather than broken into divergent subparts. At St. Olaf the number of significant differences was much greater than one would expect by chance. Of the seven groups into which the St. Olaf students were divided, only two were not significantly different from the college composite on any of the CCA scales. It is of some interest to note the location of significant differences as between the administrative, academic, and student subscales of the CCA. Three of the instances of a significant difference between a subgroup mean and the college composite occurred on the administrative subscale, three occurred on the academic subscale, and six occurred on the student subscale. Eight others occurred on the total scores. Of the 20 differences in all, ten were in the friendly, group welfare category. Despite these differences in the friendly, group welfare category, the college as a whole ranked extremely high in its emphasis in this direction. In the relative contribution of administrative, academic, and student sources of total press, St. Olaf differed most from the average of the nine colleges in two ways: on the IHE variable student sources of press were considerably greater than administrative sources, and on the W variable student sources of press were considerably greater than academic sources.

Relationships between environmental emphases and the attainment of relevant objectives were more frequently congruent than inconsistent. Of the four cases in Table IX-7 of a "fully inconsistent" relationship, three of these occurred in the friendly, group welfare category.

From the total number of deviant examples that involve either the friendly, group welfare emphasis, or the student subscales of the CCA, it seems plausible to suggest that student associations, friendships, and activities at St. Olaf are not grouped primarily around academic fields but that their influence on the dominant atmosphere of the campus is relatively great.

TABLE IX-1. ST. OLAF: CCA MEAN SCORES FOR SUBGROUPS AND TOTAL COLLEGE

Scale	Subgroups							Total College	
	Home Ec. (N=6)	Nursing (N=18)	Music-Art-Speech (N=17)	Eng.-Lang. (N=18)	Soc. Sci. (N=6)	Hist. (N=19)	Chem.-Biol. (N=11)	All Students (N=95)	Average of Subgroups
Intellectual Humanistic Esthetic									
Ad	9.67	9.94	9.71	8.89	7.50	9.79	7.27	9.19	8.97
Ac	10.33	9.50	11.24	9.28	11.17	11.05	10.18	10.32	10.39
St	12.50	10.11	12.35	9.78	8.33	11.16	8.64	10.53	10.41
Total	32.50	29.56	33.29	27.94	27.00	32.00	26.09	30.03	29.77
Friendly Group Welfare									
Ad	12.00	12.17	11.65	11.00	8.67	11.26	9.55	11.14	10.90
Ac	11.83	12.06	11.82	9.67	11.17	11.11	10.55	11.13	11.17
St	13.83	13.83	14.06	12.50	11.33	13.16	11.64	13.07	12.90
Total	37.67	38.06	37.53	33.17	31.17	35.53	31.73	35.34	34.97
Scientific Independent									
Ad	8.00	7.89	8.00	6.89	8.50	8.16	7.36	7.76	7.83
Ac	9.33	7.50	8.47	6.17	7.67	9.05	8.73	8.00	8.13
St	3.83	4.56	4.53	5.17	5.83	5.53	5.91	5.05	5.05
Total	21.17	19.94	21.00	18.22	22.00	22.74	22.00	20.81	21.01
Practical Status-oriented									
Ad	8.33	8.72	7.76	7.94	7.83	7.32	8.00	7.96	7.99
Ac	8.00	8.33	6.88	6.94	6.33	7.16	7.55	7.34	7.31
St	7.83	9.72	6.88	7.44	7.83	8.00	7.64	7.96	7.91
Total	24.17	26.78	21.53	22.33	22.00	22.47	23.18	23.25	23.21

TABLE IX-2. ST. OLAF: CCA STANDARD DEVIATIONS FOR SUBGROUPS AND TOTAL COLLEGE

Scale	Subgroups							Total College	
	Home Ec.	Nursing	Music-Art-Speech	Eng.-Lang.	Soc. Sci.	Hist.	Chem.-Biol.	All Students	Average of Subgroups
Intellectual Humanistic Esthetic									
Ad	1.37	1.54	1.90	1.85	1.89	1.54	1.48	1.92	1.65
Ac	2.05	2.65	1.66	2.96	1.95	2.01	1.53	2.39	2.12
St	1.71	1.94	1.53	4.44	4.11	2.21	3.55	3.21	2.78
Total	3.73	4.34	3.10	8.28	7.37	3.91	4.91	5.89	5.09
Friendly Group Welfare									
Ad	.82	1.34	1.57	1.67	2.49	1.83	1.56	1.92	1.61
Ac	1.77	1.51	2.12	2.85	.69	1.97	1.16	2.16	1.72
St	.69	1.17	1.00	2.75	1.11	2.21	2.14	2.07	1.58
Total	2.62	2.99	2.95	5.74	3.39	5.00	3.31	4.80	3.71
Scientific Independent									
Ad	1.29	1.45	1.37	2.00	1.61	1.56	1.15	1.63	1.49
Ac	2.13	1.71	1.85	1.95	2.05	2.46	3.05	2.42	2.17
St	1.21	1.54	2.06	2.41	1.57	2.39	2.35	2.17	1.93
Total	2.41	2.61	3.71	4.22	3.37	4.99	5.15	4.32	3.78
Practical Status-oriented									
Ad	2.21	2.16	1.96	1.78	1.77	1.81	1.95	1.99	1.95
Ac	.58	2.29	2.76	2.61	.47	1.39	1.23	2.15	1.62
St	2.11	1.15	1.84	1.89	1.86	1.97	2.19	2.06	1.86
Total	3.58	3.87	5.74	4.42	3.11	3.15	3.13	4.50	3.86

TABLE IX-3. ST. OLAF: DIFFERENCES BETWEEN SUBGROUP MEANS AND COMPOSITE MEAN ON CCA SCALE

Scale	Subgroups						
	Home Economics (N=6)	Nursing (N=18)	Music-Art-Speech (N=17)	English-Languages (N=18)	Social Sciences (N=6)	History (N=19)	Chemistry-Biology (N=11)
Intellectual Humanistic Esthetic							
Ad	.48	.75	.52	- .30	-1.69	.60	-1.92**
Ac	.01	- .82	.92	-1.04	.85	.73	- .14
St	1.97	- .42	1.82**	- .75	-2.20	.63	-1.89
Total	2.47	- .47	3.26**	-2.09	-3.03	1.97	-3.94*
Friendly Group Welfare							
Ad	.86	1.03*	.51	- .14	-2.47	.12	-1.59*
Ac	.70	.93*	.69	-1.46	.04	- .02	- .58
St	.76	.76*	.99**	- .57	-1.74*	.09	-1.43
Total	2.33	2.72**	2.19*	-2.17	-4.17*	.19	-3.61*
Scientific Independent							
Ad	.24	.13	.24	- .87	.74	.40	- .40
Ac	1.33	- .50	.47	-1.83**	- .33	1.05	.73
St	-1.22	- .49	- .52	.12	.78	.48	.86
Total	.36	- .87	.19	-2.59*	1.19	1.93	1.19
Practical Status-oriented							
Ad	.37	.76	- .20	- .02	- .13	- .64	.04
Ac	.66	.99	- .46	- .40	-1.01*	- .18	.21
St	- .13	1.76**	-1.08*	- .52	- .13	.04	- .32
Total	.92	3.53**	-1.72	- .92	-1.25	-..78	- .07

NOTE: * sign indicates p <.05; ** sign indicates p <.01

TABLE IX-4

ST. OLAF: DIFFERENCES BETWEEN SUBGROUP MEANS AND THE COLLEGE MEAN ON OBJECTIVES, SATISFACTIONS, AND GRADES

	N	OBJ 1	OBJ 2	OBJ 3	OBJ 4	OBJ 5	OBJ 6	OBJ 7	OBJ 8	OBJ 9	OBJ 10	OBJ 11	SAT 1	SAT 2	SAT 3	GRADES
College	103	1.74	1.94	1.87	2.05	1.69	1.55	2.03	1.94	2.03	1.54	2.47	1.47	1.67	1.39	3.62
Home Ec.	6	.07	.44	-.46	-.45	-.31	-.28	-.14	-.23	-.47	.04	.64	-.03	.17	-.28	-.71
Nursing	18	-.15	.94**	.09	-.28	.13	-.01	.14	-.45*	-.25	-.18	.64**	.08	.34*	.11	.29
Mus-Art-Spch	17	.09	-.06	-.25	.23	-.07	.08	-.09	.00	.03	.48**	-.66**	.22	.23	-.11	-.25
Eng.-Lang.	17	.21	.13	.16	.05	.16	.14	.27	.29	.38	-.05	-.71**	.06	-.21	-.02	.38
History	20	.04	-.91**	.12	.40*	.04	-.05	.08	.39	.23	-.11	-.23	-.13	-.28	.09	.04
Chem.-Biol.	11	-.26	-.33	.32	-.40	-.40	-.09	-.33	-.06	-.33	-.37	1.11**	-.44	-.51	-.06	-.11

NOTE: * sign indicates $p < .05$; ** sign indicates $p < .01$

In the top row of this table, a low score indicates a favorable rating.
In the rest of the table the minus (-) signs have their customary meaning of "less favorable."

TABLE IX-5

ST. OLAF: RANK ORDER OF ESTIMATED PROGRESS TOWARD OBJECTIVES

	Rank	Total	Home Economics	Nursing	Music-Art-Speech	English	History	Chemistry-Biology
Highest	1	10	2	2	10	6	8	11
	2	6	10	5	6	1	6	3
	3	5	1	6	1	5	4	6
	4	1	6	10	5	10	5	10
	5	3	11	3	4	8	10	1
	6	2	5	11	8	9	1	8
	7	8	7	1	2	3	3	5
	8	7	8	7	9	7	9	2
	9	9	3	9	3	2	7	7
	10	4	4	4	7	4	11	9
Lowest	11	11	9	8	11	11	2	4

NOTE: Bracketed numbers indicate tied ranks.

TABLE IX-6. ST. OLAF: ANALYSIS OF SIGNIFICANT RELATIONSHIPS BETWEEN ENVIRONMENT AND ATTAINMENT

IHE		W		SI		PS	
Press	Progress 1, 4, 10	Press	Progress 5, 7	Press	Progress 3, 8, 11	Press	Progress 2
MAS (St) +	MAS (10) +	Nurs (Ad) +	+	Engl-Lang (Ac) -	Engl (11) -	Nurs (St) +	Nurs (2) +
MAS (Tot.) +		Nurs (Ac) +		Engl-Lang (Tot.) -		Nurs (Tot.) +	
		Nurs (St) +					
		Nurs (Tot.) +					
Chem-Biol (Ad) -	-			-	Nurs (8) -	MAS (St) -	-
Chem-Biol (Tot.) -					Nurs (11) +		
+	Hist (4) +	MAS (St) +	-	+	MAS (11) -	-	Hist (2) -
		MAS (Tot.) +					
		Chem-Biol (Ad) -	-				
		Chem-Biol (Tot.) -		+	Chem-Biol (11) +		

NOTE: MAS = Music, Art, Speech

TABLE IX-6 (concluded)

ST. OLAF: SUMMARY OF RELATIONSHIPS

	No. of Examples	
Environment and Attainment both significant and consistent	3	10
Environment significant and Attainment consistent	4	
Attainment significant and Environment consistent	3	
Neutral	1	
Environment significant but Attainment inconsistent	1	2
Attainment significant but Environment inconsistent	1	
Environment and Attainment both significant but inconsistent	0	
	13	

TABLE XI-7

ST. OLAF: "SIGN TEST" ANALYSIS OF RELATIONSHIPS BETWEEN ENVIRONMENT AND ATTAINMENT

Subgroups	IHE		W		SI		PS	
	Press	Progress 1, 4, 10	Press	Progress 5, 7	Press	Progress 3, 8, 11	Press	Progress 2
Home Economics	+	+ - +	+	- -	+	- - +	+	+
Nursing	-	- - -	⊕	+ +	-	+ ⊖ +	⊕	⊕
Music-Art-Speech	⊕	+ + ⊕	⊕	- -	+	- o ⊖	⊖	-
English-Languages	-	+ + -	-	+ +	⊖	+ + ⊖	-	+
History	+	+ ⊕ -	+	+ +	+	+ + -	-	⊖
Chemistry-Biology	⊖	- - -	⊖	- -	+	+ - ⊕	-	-

SUMMARY OF RELATIONSHIPS

Pattern	No. of Examples	
Fully consistent	11	15
Mainly consistent	4	
Neutral	0	
Mainly inconsistent	5	9
Fully inconsistent	4	
	24	

NOTE: ○ indicates a significant difference from the composite mean.

TABLE IX-8

ST. OLAF: DIFFERENCES BETWEEN ADMINISTRATIVE, ACADEMIC, AND STUDENT SUBSCORES (66%+ METHOD)

CCA Scores Based on 66%+ Consensus

	IHE	W	SI	PS
Ad	7	12	4	5
Ac	10	10	6	4
St	11	15	3	6
Total	28	37	13	15

Differences

		St. Olaf	Composite of Nine Colleges
IHE	Ad vs. Ac	-3	.1
	Ad vs. St	-4	2.2
	Ac vs. St	-1	2.1
W	Ad vs. Ac	2	0
	Ad vs. St	-3	-1.3
	Ac vs. St	-5	-1.3
SI	Ad vs. Ac	-2	- .2
	Ad vs. St	1	2.8
	Ac vs. St	3	3.0
PS	Ad vs. Ac	1	.3
	Ad vs. St	-1	-1.1
	Ac vs. St	-2	-1.4

NOTE: Minus (-) signs indicate that the first item of the pair is lower than the second.

CHAPTER X

DE PAUW

Greencastle, Indiana, is the site of De Pauw University, a Methodist related school that has often been ranked among the better liberal arts schools of the country. Although most of its students are Hoosiers, many also come from neighboring states and from the east. For years, owing to the benefaction of Edward Rector, it has been able to offer scholarships to valedictorians and salutatorians of Indiana high schools and thus to attract a good many academically talented students to its campus.

Environmental Scores

Means and standard deviations on the CCA scales for each of the academic classifications at De Pauw are shown in Tables X-1 and X-2. From the composite means, one can see that De Pauw's highest scores are on the Friendly, Group Welfare scales. The Practical, Status-oriented emphasis is also high, as is the Intellectual, Humanistic, Esthetic emphasis. The lowest scores are on the Scientific, Independent emphasis. From the standard deviations, one can see that two thirds of the scores on the 15-item scales typically fall within a range of four to six points, and that on the 45-item scales a range of eight to eleven points typically includes two thirds of the scores. Students in some subgroups are in much more agreement about their group than are students in other groups: the English subgroup, for example, has a large difference of opinion within it about the IHE emphasis, whereas the Social Science group has a high degree of unanimity about that emphasis; on the W scales, however, the Social Science group has considerable diversity and the English group has a high degree of consistency.

From Table X-3 one can see that each subgroup at De Pauw (except the History-Philosophy group) differs significantly from the college composite on at least one of the CCA scales. For example, the Education subgroup has lower than average scores on the IHE and SI scales. The Physical and Biological Science subgroups have lower than average scores on the W scales; whereas the English and Languages subgroups are higher than average on the W scales. The total number of such differences, however, is quite small. With nine subgroups, and 16 scores in each, there are 144 comparisons between a subgroup score and a composite score, of which ten are significant at or beyond the 5 percent level.

From the above data, the general impression one gains is that the De Pauw environment is basically homogeneous. This impression is further supported by the fact that there are no differences as large as three points between any two subgroups on any of the subscores on the Practical, Status-oriented scales, or on the administrative and student subscores of the Intellectual, Humanistic, Esthetic scales, or on the academic and student subscores of the Friendly, Group Welfare scales, or on the administrative and student subscores of the Scientific, Independent scales. There are, however, a few subgroups which differ by more than three points from one another. Education majors, in describing the IHE emphasis of their own department, give it a score of three points lower, or more, than do Psychology, History and Philosophy, Physical Science, Biological Science, Language, and Speech-Art-Music majors in describing those respective departments. Physical Science majors, in describing the W emphasis on the administrative subscale, differ by three points or more from the majors in English and Languages. And Psychology majors differ from Social Science majors by three points or more in the academic subscore of the SI scale. On the total scores of the four major scales, no subgroup differs by as much as four points from one another on the IHE or on the PS dimensions. On the W total score, Physical Science is more than four points lower than English and Languages. On the SI scale Education is more than four points lower than Physical Science.

Attainment Scores

Differences between subgroups and the composite in ratings of progress toward the attainment of various objectives are shown in Table X-4. There are no significant differences between subgroup means and the composite on Objectives 5, 6, 7, 8 (social development, personal development, citizenship, and critical thinking). The largest number of significant differences between the subgroup ratings and the composite are in the ratings of Objective 11 (science and technology). On this objective the subgroups of Psychology, Physical Science, and Biological Science indicate a significantly greater sense of progress, and the subgroups of English and Education indicate a significantly lesser sense of progress than the average for the college as a whole. Other significant differences in progress toward objectives, all of which are in the direction one would expect, are as follows: Education is high and History-Philosophy is low on Objective 2 (vocational training); Biological Science is high on Objective 3 (specialization for further education); History-Philosophy is high and Education is low on Objective 4 (understanding different philosophies and cultures); English and Languages are high on Objective 9 (effective communication); and Speech-Art-Music is high on Objective 10 (appreciation of art, music, and literature). The one other significant difference in the table can be regarded as unexpected: Psychology is high on Objective 1 (broad cultural education).

None of the subgroups differs from the composite in grades; but there are three groups which differ from the composite in their responses to the third item on satisfactions with college. This item asked students to indicate whether they had found groups in the college which were really congenial and with which they felt happy. At De Pauw the Language majors and the Education majors felt they had found such congenial groups to a greater extent, and the Physical Science majors to a lesser extent, than was characteristic for the college as a whole. This result seems to have no relation to these academic fields as such; for none of the groups differed significantly from the college means on the CCA student subscores in either the friendly, group welfare direction or the practical, status-oriented direction.

The relative rank order of mean ratings given to the objectives, for the college as a whole and for each subgroup, is shown in Table X-5. Objective 11 (science and technology) is at or near the bottom of the list for all groups except Physical Science, Biological Science, and Psychology. Objective 2 (vocational training) is at or near the bottom for all groups except Education and Speech-Art-Music. Objective 9 (effective communication) is at the top of the list for English, near the top for Languages, and below the midpoint for all other groups. The above examples amplify and confirm the information presented in the previous table. For the college as a whole, the highest mean attainment ratings are given to the objectives of personal and social development, background for further scholarly work, appreciation of the arts, and broad cultural education, in the order listed. The liberal arts emphasis is evident and is quite consistent with the general purposes and reputation of De Pauw as a liberal arts college. In De Pauw, as in Swarthmore and Antioch, the greatest deviations from the general humanistic atmosphere occur in the sciences.

Relationship Between Environment and Attainment

Table X-6 shows the juxtaposition of all the significant deviations previously shown separately in Tables X-3 and X-4. There are three instances in which a significant deviation on the environmental score is paralleled by a significant deviation in the expected direction on a relevant attainment rating. In the remaining examples shown in the table, the direction of relationship between environment scores and attainment scores is consistent in 12 cases and inconsistent in one.

The more inclusive but less rigorous "sign test" analysis of these relationships (all relationships regardless of their significance) is shown in Table X-7. In this table several totally inconsistent relationships are seen, but they are outnumbered by the totally consistent relationships in a ratio of 2 to 1.

Differences Between Administrative, Academic, and Student Subscores

The relative contributions of administrative, academic, and student subscores to the total environmental press at De Pauw are shown in Table X-8. Several speculations about the De Pauw atmosphere can be made from these data. Looking at the student subscores, one can immediately see that characteristics which students ascribe to one another and to the extracurricular life of the campus contribute virtually nothing to the humanistic or to the scientific press of the college, but they contribute substantially to the practical, status-oriented emphasis and also to the friendly, group welfare aspect of the environment. Comparing the administrative and the academic subscores, one can see that the administrative subscores are closer to the student subscores than they are to the academic, or faculty, subscores on all four of the scales. From the consistency and the size of these differences one might conclude that the important internal dynamics of the De Pauw environment are seen in faculty vis-à-vis students and administration rather than in the differences between various subgroups of academic majors or departments. At any rate, characteristics ascribed to the academic aspects of the institution (the faculty, the instructional demands, and the curricular emphasis) differ substantially from presumably supportive or complementary characteristics ascribed to administrative and student aspects of the institution.

Personality Scores

De Pauw students are described in Table X-9 in respect to scores on the ACE and on the several scales of the Heston Personal Adjustment Inventory. Means accompanied by a single asterisk (*) or two (**) identify those which differ significantly from the college average at the 5 percent and 1 percent level, respectively. The mean score for the college on the ACE is .7 of a sigma above the national average on this test, placing De Pauw students at the 76th percentile.

Majors in Psychology and in English do not differ from the mean of the college as a whole on any of the tests listed in the table. Majors in the other academic groupings differ significantly from the mean of the college on at least one or more of the aptitude or personality measures.

Education majors are low on the measures of Analytical Thinking and Confidence, but high on Home Satisfaction. Social Science majors are low on Sociability. History and Philosophy majors are high on Analytical Thinking, Emotional Stability, and Home Satisfaction. Physical Science majors are high on ACE-Q and low on Sociability. Biological Science majors are high on ACE-L and ACE-T, and Analytical Thinking. Majors in Languages are high on ACE-L, and Sociability. Speech, Art, and Music majors, as a group, are low on ACE-L, and on Home Satisfaction. Considering only the personality tests, the number of significant differences between a subgroup mean and the college composite is about 20 percent of the total possible number. Since the number of significant differences between subgroups and the composite on the various CCA scores was 7 per cent, and on the various attainment ratings of progress toward objectives was 14 percent, it is apparent that the subgroups at De Pauw differ more in their student input than in either their environmental press or their estimated achievement of objectives.

Patterns of Influence

The extent to which attainment of relevant objectives is related to the environmental press of various subgroups has been noted. It is now possible to make a similar comparison between attainment and the personality scores of the students; and then put the two comparisons together in an exploration of more complex patterns of interaction and influence. Just as only certain objectives are relevant to certain environmental press dimensions, so also only certain personality dimensions are relevant to those objectives. At De Pauw, for example, what personality scores may reasonably be considered as relevant to any of the four environmental press dimensions and the objectives previously classified as pertinent? From an examination of the manual for the Heston Personal Adjustment Inventory, and from an inspection of the test items in each of its six parts, the following judgments were made: Analytical Thinking is relevant both to the IHE dimension and the SI dimension of environmental press; Sociability and Personal Relations are both relevant to the W dimension of environmental press; and the remaining scales measuring Emotional Stability, Confidence, and Home Satisfaction are neither primarily nor exclusively relevant to any of the four environmental press categories.

When the mean scores of students in each of the De Pauw subgroups on these tests are classified as plus or minus, meaning above or below the college composite, and related to the scores of these subgroups on the attainment ratings of relevant objectives, in the manner previously illustrated by the "sign test" analysis in Table X-7, the following relationships between personality and attainment are obtained:

Relationship	Number of Examples
Fully consistent	20
Mainly consistent	7
Neutral	2
Mainly inconsistent	1
Fully inconsistent	6
	36

A comparison between these results and the summary in Table X-7 indicates that the personality variables are clearly related, and to about the same degree, to the attainment of relevant objectives as were the environmental press variables.

The reason for this result is that in most cases the personality scores of students and the press scores of the environment are congruent with one another. For example, subgroups whose SI press is above average usually consist of students whose Analytical Thinking score is also above average. For the most part, then, the characteristics of students and of their environments are complementary rather than opposed to one another.

The extent to which this is true, and also what results occur when it is not true, is shown in the following summary:

> When Environment and Personality are congruent, the relationships to Attainment ratings of relevant objectives are:

	Number of Examples	
Fully consistent	18	23
Mainly consistent	5	
Neutral	2	
Mainly inconsistent	0	2
Fully inconsistent	2	

> But, when Environment and Personality are different, the relationships to Attainment ratings of relevant objectives are:

Fully consistent with Environment	4	5
Mainly consistent with Environment	1	
Neutral	0	
Mainly consistent with Personality	2	4
Fully consistent with Personality	2	
Total	36	

In these comparisons, congruence between environment and personality means that the average score of the subgroup on both measures is either higher or lower than the corresponding average score for the college as a whole. Consistent refers to the relationships between environment or personality mean scores on the one hand, and mean rating of progress toward a relevant objective on the other hand. In most instances, 27 out of 36, personality and press are congruent; and when this is true the attainment of relevant objectives is consistent in 23 cases, neutral in two cases, and inconsistent in two cases. Where personality and press are different--that is, one is above average and one is below average--the mean attainment ratings are consistent with the press of the subgroup in five cases and consistent with the personality measure in four cases. Thus, in accounting for the sense of progress which a group expresses toward the achievement of various objectives, the influence of the press of the subgroup to which they belong and the influence of the personality of their peers in the subgroup are about equal.

In the above comparisons the various subgroups have been the unit of analysis. In the following comparisons groups that are alike are combined into a larger unit of analysis. First, all subgroups which had a mean score above the composite college mean on a particular CCA dimension were considered together as a "high press" group; all subgroups whose mean was below the college mean were considered together as a "low press" group. Then, within each of these two groups the students were divided into two additional groups--those who scored above the college average on a particular personality test and those who scored below the college average. And then, for each of the four groups so constituted, the mean score on progress toward relevant objectives was obtained and classified as being above or below the college average. The results of these analyses for the relevant combinations of environmental press, dimensions of personality, and objectives are as follows:

Environment	Personality	Attainment of Objectives		
IHE	Anal Th	1	4	10
+	+	+	+	+
-	-	-	-	-
-	+	-	+	-
-	-	-	-	-
W	Pers Rel	5	7	
+	+	+	+	
+	-	+	0	
-	+	-	-	
-	-	-	-	
W	Sociab	5	7	
+	+	+	+	
+	-	-	-	
-	+	+	+	
-	-	-	-	
SI	Anal Th	3	8	11
+	+	+	+	+
+	-	-	-	+
-	+	-	-	-
-	-	-	-	-

These data provide a general answer to two questions. What happens to similar students in different environments? And what happens to different students in similar environments? Taking the combination of IHE press, Analytical Thinking personality score, and progress toward the relevant objectives numbered 1, 4, and 10 as an example, one can see that students who are above average in Analytical Thinking have above average attainment ratings on Objectives 1, 4, and 10, when they are members of a group that has above average IHE press, but make below average progress toward objectives 1 and 10 when they are members of a group that has below average IHE press. Students who are below average in Analytical Thinking make below average progress toward objectives 1, 4, and 10 regardless of the IHE press. Similar observations can be made of the various other combinations shown above. For the college as a whole, combining all relevant comparisons, the following pattern is obtained:

		Relevant Attainment		
Environment	Personality	+	-	o
+	+	10	0	0
+	-	2	7	1
-	+	3	7	0
-	-	0	10	0

Again it is clear that the relative influence of environment and personality on attainment is about equal. Students whose relevant personality scores are below average tend to achieve below average. But students whose relevant personality scores are above average do not achieve above average, in most cases, unless they are in a supportive environment.

In Tables X-10 and X-11 a complete record is shown of all relationships to the criterion variables--objectives, satisfactions, and grades--that are totally consistent with the influence of environmental press, or totally consistent with the influence of personality scores, or totally the opposite of press or personality influences. A Technical Note, explaining the data in these tables, will be found in the Appendix. Because similar data are shown for each of the remaining colleges to be described, and because the data are complex, the reader should turn to the Appendix at this point.

Both tables present the same information, but arranged in a different way. In Table X-10, the major groupings are by environmental press categories; in Table X-11, the major groupings are by personality test scores. The encircled segments of the tables identify areas in which the influence on the criterion variable is most consistent. In the first table, for example, progress toward Objective 1 is consistently related to the Practical, Status-oriented press, regardless of the personality of students. Progress toward Objectives 3, 4, 8, and 11 is consistently related to the Scientific, Independent press, regardless of the characteristics of students. Progress toward Objective 11 is consistently related to an anti-Welfare press. Progress toward Objective 4 is also consistently related to the IHE press; but progress toward Objective 5 is most consistently related to personality characteristics of students regardless of the IHE press. Typically, the criterion of satisfaction with college life is related to students' personality characteristics, except that the W press is consistently related to scores on the first and third satisfaction items, and the PS press is consistently related to scores on the third satisfaction item. Grades are typically related to personality characteristics rather than to environmental characteristics.

In the second table, students' scores on the Analytical Thinking test are most consistently related to the attainment of Objectives 3, 4, and 8, regardless of environmental press; but Objective 6 is related to anti-Analytical Thinking. The Sociability score is related to the attainment of Objectives 5 and 6, regardless of press. Attainment of Objectives 1 and 4 is related to environmental press, regardless of students' scores on the Emotional Stability measure. And Home Satisfaction is related to Objective 7 regardless of environmental press. With respect to the measures of satisfaction with college life, one can see that the second item (How much of the time do you feel satisfied with your college?) is most consistently related to the student characteristics of Emotional Stability, Confidence, Personal Relations, and Home Satisfaction.

The data in these two tables relate all personality and press variables to all criterion variables. Except for the criterion variables of satisfactions and grades, which are probably neutral with respect to most of the personality and press measures, the relationships in the tables include many which one might expect to be positive, many which one might expect to be negative, and many which would presumably be neutral. There is little reason to suppose, for example, that Home Satisfaction would be related in any particular way to Scientific, Independent press or to developing an enjoyment and appreciation of art, music, and literature. What one can see in the tables is that there are many more patterns than nonpatterns in relation to what would be expected by chance--since, as explained in the Technical Note in the Appendix, one would expect by chance only 29 percent to be totally consistent patterns but in fact there are 48 percent in relation to objectives, 65 percent in relation to satisfactions, and 42 percent in relation to grades. One can also see from the tables the location and nature of these totally consistent patterns; for example, that among the patterns related to the attainment of objectives there are more press patterns than need, or personality, patterns; that satisfaction ratings are primarily related to personality patterns, except for the influence of the Welfare press; and that when there is any pattern in relation to grades it is nearly always a personality pattern but that the total number of patterns in relation to grades is not significantly greater than chance.

From Tables X-10 and X-11 one can extract the presumably relevant relationships. Considering only those objectives relevant to the environmental press dimensions, one gets the following pattern of totally consistent relationships:

	Patterns				
Environment	+	-	N	0	Relevant Objectives
IHE	9		2		1, 4, 10
W	3		2		5, 7
SI	14		1		3, 8, 11
PS	1				2
	27	0	5	0	

Since there are altogether nine relevant objectives, and since each of the press dimensions is examined across six personality scores, the total possible number of relationships under consideration is 9 x 6, or 54. Of these, 27 are totally consistent with a press emphasis, five are totally consistent with a personality emphasis, and the remaining 22 are nonpatterns. The total number of consistent patterns in this smaller, but more relevant, matrix is twice as large as one would expect by chance. The total number of consistent press patterns is seven times larger than one would expect by chance; but the total number of consistent personality patterns is no larger than chance expectancy.

Next, considering only those objectives relevant to various personality measures, one gets the following pattern of totally consistent relationships:

	Patterns				Relevant
Personality	+	-	N	0	Objectives
Anal Th	1		5		1, 4, 10
Sociab			6		5, 7
Pers Rel	2		1		5, 7
Anal Th	3	3			3, 8, 11
	6	3	12	0	

In this matrix there are ten relevant objectives, with each personality factor being examined across four categories of environmental press, so that the total possible number of relationships under consideration is 10 x 4, or 40. Of these, six are totally consistent with a press pattern, three with an anti-press pattern, 12 with a personality pattern, and the remaining 19 are nonpatterns. The total number of consistent patterns in this smaller matrix is about the same, proportionately, as in the large matrix. The number of consistent personality patterns is four times greater than chance expectancy, and the number of press patterns is twice as great as chance expectancy, although in both of these instances one cannot take percentages or ratios too seriously because they are based on such a small number of cases.

Summary

Differences in environmental press among the various academic subgroups at De Pauw are both few in number and small in size. Differences in personality characteristics of students in these various academic subgroups are somewhat larger, both in number and in size. Typically, however, there is a congruence between the characteristics of students and the environment which leads to attainments that are consistent with these mutually supportive elements. When there is lack of congruence, the relevant attainments are about equally influenced by the press variables and the personality variables. Students' satisfaction with college life is primarily related to personality characteristics which reflect sociability and confident human relations together with the Welfare press of the college. Since the dominant environmental emphases at De Pauw are the Friendly, Group Welfare and the Practical, Status-oriented dimensions on the CCA, one gets the impression that these features, together with the socially oriented characteristics of students, determine much of the institutional character. The academic aspects of the environment, strongly pushed by the faculty and the instruction demands, are not the dominant aspects. Achievement of intellectual objectives, such as numbers 1, 3, 4, 8, 10, and 11, is seldom above average unless students' scores on the Analytical Thinking scale are also above average. On the whole, in relation to the relevant objectives, there are more totally consistent press patterns than totally consistent personality patterns. The intellectual press of the institution, however, both humanistic and scientific, is probably not as strong as its faculty would like to have it.

TABLE X-1. DE PAUW: CCA MEAN SCORES FOR SUBGROUPS AND TOTAL UNIVERSITY

Scale	Subgroups									Total University	
	Educ. (N=18)	Psych. (N=30)	Soc. Sci. (N=12)	Hist.-Phil. (N=17)	Phys. Sci. (N=11)	Biol. Sci. (N=11)	Engl. (N=5)	Lang. (N=21)	Speech-Art-Music (N=9)	All Students (N=134)	Average of Subgroups
Intellectual Humanistic Esthetic											
Ad	8.28	8.17	7.75	7.94	8.82	7.91	7.60	7.38	8.22	8.01	8.01
Ae	6.67	10.53	8.67	11.12	10.00	10.45	8.20	10.76	9.67	9.76	9.56
St	7.89	7.40	7.83	7.00	7.36	5.64	6.60	8.24	8.44	7.48	7.38
Total	22.83	26.10	24.25	26.06	26.18	24.00	22.40	26.38	26.33	25.25	24.95
Friendly Group Welfare											
Ad	12.00	10.77	10.33	11.47	9.27	9.73	12.60	12.29	11.00	11.10	11.05
Ae	10.44	10.50	10.92	10.35	9.73	10.45	11.00	10.67	8.11	10.33	10.24
St	10.78	10.57	10.75	10.71	10.55	11.00	11.20	11.81	10.89	10.90	11.02
Total	33.22	31.83	32.00	32.53	29.55	31.18	34.80	34.76	30.00	32.33	32.31
Scientific Independent											
Ad	5.83	5.83	5.58	5.59	6.18	5.36	6.80	6.00	5.56	5.81	5.86
Ae	6.67	8.83	5.67	8.59	8.36	8.55	6.00	8.00	7.11	7.81	7.53
St	2.83	4.20	5.67	3.65	4.82	3.91	3.00	3.86	3.44	3.96	3.93
Total	15.33	18.87	16.92	17.82	19.36	17.82	15.80	17.86	16.11	17.58	17.32
Practical Status-oriented											
Ad	9.78	9.63	8.92	8.71	8.09	8.45	8.80	9.86	9.33	9.23	9.06
Ae	8.78	7.70	7.92	7.35	8.09	8.55	9.00	7.48	7.22	7.90	8.01
St	10.44	10.10	10.17	10.35	10.73	10.09	10.60	10.76	9.11	10.29	10.26
Total	29.00	27.43	27.00	26.41	26.91	27.09	28.40	28.10	25.67	27.43	27.33

TABLE X-2. DE PAUW: CCA STANDARD DEVIATIONS FOR SUBGROUPS AND TOTAL UNIVERSITY

Scale	Subgroups									Total University	
	Educ.	Psych.	Soc. Sci.	Hist.-Phil.	Phys. Sci.	Biol. Sci.	Engl.	Lang.	Speech-Art-Music	All Students	Average of Subgroups
Intellectual Humanistic Esthetic											
Ad	2.35	2.35	1.42	2.10	2.04	2.57	2.15	2.72	1.31	2.28	2.11
Ac	2.52	1.89	1.84	2.59	2.00	2.06	2.04	2.51	3.27	2.72	2.30
St	2.47	2.59	2.67	3.05	3.02	3.42	3.14	3.56	3.06	3.06	2.99
Total	4.95	4.81	2.74	5.06	5.54	5.98	6.25	7.26	5.56	5.67	5.35
Friendly Group Welfare											
Ad	1.70	2.39	2.43	2.17	2.18	1.81	.50	1.72	2.58	2.30	1.94
Ac	2.54	2.50	2.43	2.45	1.91	1.56	1.90	2.95	2.47	2.53	2.30
St	2.17	2.25	1.53	1.67	1.83	1.95	1.17	1.97	1.85	2.00	1.82
Total	4.86	5.66	4.98	4.26	3.45	2.82	2.23	5.21	5.33	5.03	4.31
Scientific Independent											
Ad	1.83	1.37	2.40	1.54	1.64	1.49	.75	1.45	2.11	1.68	1.62
Ac	2.40	1.73	2.56	2.20	2.19	1.44	3.03	2.12	2.69	2.42	2.26
St	1.95	2.73	2.53	2.25	2.12	2.43	1.67	2.27	2.11	2.46	2.23
Total	4.62	3.14	3.93	3.90	4.77	3.88	3.66	4.22	3.73	4.17	3.98
Practical Status-oriented											
Ad	1.44	2.26	2.36	1.60	1.98	1.72	1.17	1.98	2.49	2.06	1.89
Ac	1.96	2.15	2.40	2.99	2.64	1.72	2.10	2.63	1.40	2.38	2.22
St	1.71	2.12	2.73	1.91	1.48	1.73	2.06	1.66	2.96	2.07	2.04
Total	3.09	5.00	5.49	4.33	3.80	2.54	4.76	4.78	2.91	4.42	4.07

TABLE X-3. DE PAUW: DIFFERENCES BETWEEN SUBGROUP MEANS AND COMPOSITE MEAN ON CCA SCALES

Scale	Subgroups								
	Educ. (N=18)	Psych. (N=30)	Soc. Sci. (N=12)	Hist.-Phil. (N=17)	Phys. Sci. (N=11)	Biol. Sci. (N=11)	Engl. (N=5)	Lang. (N=21)	Speech-Art-Music (N=9)
Intellectual Humanistic Esthetic									
Ad	.27	.16	- .26	- .07	.81	- .10	- .41	- .63	.21
Ac	-3.09**	.77	-1.09	1.36	.24	.69	-1.56	1.00	- .09
St	.41	- .08	.35	- .48	- .12	-1.84	- .88	.76	.96
Total	-2.42	.85	-1.00	.81	.93	-1.25	-2.85	1.13	1.08
Friendly Group Welfare									
Ad	.90	- .33	- .77	.37	-1.83*	-1.37*	1.50**	1.19**	- .10
Ac	.11	.17	.59	.02	- .60	.12	.67	.34	-2.22*
St	- .12	-..33	- .15	- .19	- .35	.10	.30	.91	- .01
Total	.89	- .50	- .33	.20	-2.78*	-1.15	2.47	2.43	-2.33
Scientific Independent									
Ad	.02	.02	- .23	- .22	.37	- .45	.99	.19	- .25
Ac	-1.14	1.02*	-2.14*	.78	.55	.74	-1.81	.19	- .70
St	-1.13*	.24	1.71	- .31	.86	- .05	- .96	- .10	- .52
Total	-2.25	1.29	- .66	.24	1.78	.24	-1.78	.28	-1.47
Practical Status-oriented									
Ad	.55	.40	- .31	- .52	-1.14	- .78	- .43	.63	.10
Ac	.88	- .20	.02	- .55	.19	.65	1.10	- .42	- .68
St	.15	- .19	- .12	.06	.44	- .20	.31	.47	-1.18
Total	1.57	.01	- .43	-1.02	- .52	- .34	.97	.67	-1.76

NOTE: * sign indicates $p < .05$; ** sign indicates $p < .01$

TABLE X-4

DE PAUW: DIFFERENCES BETWEEN SUBGROUP MEANS AND THE UNIVERSITY MEAN ON OBJECTIVES, SATISFACTIONS, AND GRADES

	N	OBJ 1	OBJ 2	OBJ 3	OBJ 4	OBJ 5	OBJ 6	OBJ 7	OBJ 8	OBJ 9	OBJ 10	OBJ 11	SAT 1	SAT 2	SAT 3	GRADES
University	131	2.08	2.52	2.01	2.46	1.77	1.66	2.25	2.13	2.21	2.02	2.59	1.87	2.21	1.67	3.37
Education	20	-.22	.92**	-.44	-.39*	.12	.01	.10	-.17	-.09	-.03	-.46*	.17	-.09	.47**	-.18
Psychology	30	.27*	-.33	.31	.20	.10	.22	.03	.06	-.05	-.13	.52**	-.13	-.01	-.07	-.04
Soc. Sci.	12	-.22	-.28	-.29	.16	-.23	-.14	.05	-.17	-.09	-.18	.19	-.13	-.09	-.33	-.43
Hist.-Phil.	17	.20	-.48*	.30	.46*	.12	.07	.07	.19	.15	.02	-.29	.05	.15	.08	.19
Phys. Sci.	12	-.37	-.03	.19	-.18	-.50	-.25	-.02	.04	-.34	-.07	.59**	-.31	.03	-.78**	.19
Biol. Sci.	11	-.22	.02	.81**	.06	-.13	-.24	-.05	.33	-.19	-.28	1.39**	-.13	-.09	-.33	-.03
English	8	.37	.09	-.28	.03	.20	.37	-.18	-.01	.50*	.16	-.27	.30	.21	-.04	.08
Languages	19	.26	-.19	-.23	-.17	.12	-.10	-.10	-.11	.68**	.14	-.76**	.22	-.20	.38**	.31
Speech-Art-Music	10	-.32	.32	-.29	-.44	-.13	-.14	-.25	.03	-.49	.62**	-.61	.07	.21	.17	.07

NOTE: * sign indicates $p < .05$; ** sign indicates $p < .01$

In the top row of this table, a low score indicates a favorable rating.
In the rest of the table the minus (-) signs have their customary meaning of "less favorable."

TABLE X-5

DE PAUW: RANK ORDER OF ESTIMATED PROGRESS TOWARD OBJECTIVES

	Rank	Total	Educ.	Psych.	Soc. Sci.	Hist.-Phil.	Phys. Sci.	Biol. Sci.	Engl.	Lang.	Speech Art-Music
Highest	1	6	2	6	6	6	3	3	9	6	10
	2	5	5	5	5	5	6	11	5	5	6
	3	3	6	3	7	3	11	8	6	1	5
	4	10	10	1	10	1	8	5	1	9	8
	5	1	7	8	1	8	10	6	10	10	2
	6	8	1	11	3	4	5	1	3	8	3
	7	9	8	10	4	10	7	7	8	3	1
	8	7	9	7	8	9	1	10	7	2	7
	9	4	3	4	9	7	2	4	4	4	9
	10	2	4	9	11	11	9	9	2	7	4
Lowest	11	11	11	2	2	2	4	2	11	11	11

NOTE: Bracketed numbers indicate tied ranks.

TABLE X-6. DE PAUW: ANALYSIS OF SIGNIFICANT RELATIONSHIPS BETWEEN ENVIRONMENT AND ATTAINMENT

IHE		W		SI		PS	
Press	Progress 1, 4, 10	Press	Progress 5, 7	Press	Progress 3, 8, 11	Press	Progress 2
Educ (Ac) -	Educ (4) -	Phys (Ad) - Phys (Tot.) -	-	Educ (St) -	Educ (11) -	-	HP (2) -
+	Psy (1) +	Biol (Ad) -	-	Psy (Ac) +	Psy (11) +	+	Educ (2) +
+	HP (4) +	Lang (Ad) +	o	SS (Ac) -	-		
+	SAM (10) +	Engl (Ad) +	+	+	Biol (3) + Biol (11) +		
		SAM (Ac) -	-	+	Phys (11) +		
				+	Lang (11) -		

SUMMARY OF RELATIONSHIPS

	No. of Examples
Environment and Attainment both significant and consistent	3
Environment significant and Attainment consistent	5
Attainment significant and Environment consistent	7
Environment significant and Attainment neutral	1
Environment significant and Attainment inconsistent	0
Attainment significant and Environment inconsistent	1
Environment and Attainment both significant but inconsistent	0

NOTE: HP = History-Philosophy; SAM = Speech-Art-Music; SS = Social Science

TABLE X-7

DE PAUW: "SIGN TEST" ANALYSIS OF RELATIONSHIPS BETWEEN ENVIRONMENT AND ATTAINMENT

Subgroups	IHE		W		SI		PS	
	Press	Progress 1, 4, 10	Press	Progress 5, 7	Press	Progress 3, 8, 11	Press	Progress 2
Education	⊖	- ⊖ -	+	+ +	⊖	- - -	+	⊕
Psychology	+	⊕ + -	-	+ +	⊕	+ + ⊕	+	-
Social Science	-	- + -	-	- +	⊖	- - +	-	-
History-Philosophy	+	+ ⊕ +	⊕	+ +	+	+ + -	-	⊖
Physical Science	+	- - -	⊖	- -	+	+ + ⊕	-	-
Biological Science	-	- + -	⊖	- -	+	⊕ + ⊕	-	+
English	-	+ + +	+	+ -	-	- - -	+	+
Languages	+	+ - +	+	+ -	+	- - ⊖	+	-
Speech-Art-Music	+	- - ⊕	⊖	- -	-	- + -	-	+

SUMMARY OF RELATIONSHIPS

Pattern	No. of Examples	
Fully consistent	17	24
Mainly consistent	7	
Neutral	3	
Mainly inconsistent	1	9
Fully inconsistent	8	
	36	

NOTE: ○ indicates a significant difference from the composite mean.

TABLE X-8

DE PAUW: DIFFERENCES BETWEEN ADMINISTRATIVE, ACADEMIC, AND STUDENT SUBSCORES (66%+ METHOD)

CCA Scores Based on 66%+ Consensus

	IHE	W	SI	PS
Ad	5	11	1	7
Ac	9	8	5	4
St	3	10	0	10
Total	17	20	6	21

Differences

		De Pauw	Composite of Nine Colleges
IHE	Ad vs. Ac	-4	.1
	Ad vs. St	2	2.2
	Ac vs. St	6	2.1
W	Ad vs. Ac	3	0
	Ad vs. St	1	-1.3
	Ac vs. St	-2	-1.3
SI	Ad vs. Ac	-4	- .2
	Ad vs. St	1	2.8
	Ac vs. St	5	3.0
PS	Ad vs. Ac	3	.3
	Ad vs. St	-3	-1.1
	Ac vs. St	-6	-1.4

NOTE: Minus (-) signs indicate that the first item of the pair is lower than the second.

TABLE X-9

DE PAUW: MEAN SCORES OF SUBGROUPS AND TOTAL UNIVERSITY ON THE ACE AND THE HESTON PERSONAL ADJUSTMENT INVENTORY

Subgroups	N	ACE			HESTON					
		ACE-Q	ACE-L	ACE-T	Analytical Thinking	Sociability	Emotional Stability	Confidence	Personal Relations	Home Satis-faction
Total University	140	47.62	76.40	122.92	24.08	28.02	26.62	24.81	26.46	40.34
Education	20	46.05	74.22	120.28	20.06**	28.56	25.11	20.94*	26.44	43.89**
Psychology	30	47.43	76.21	123.46	24.75	29.36	25.79	25.61	26.32	37.46
Social Science	12	48.45	70.18	112.36	22.91	22.64*	21.18	21.09	24.63	37.91
History-Philos.	17	45.00	72.43	117.43	27.14*	28.71	30.50*	27.71	27.57	43.64*
Physical Science	12	59.91**	76.73	130.82	25.55	22.55*	29.00	23.73	26.36	41.91
Biological Sci.	11	50.82	87.18*	138.00*	28.36*	27.00	29.55	28.09	27.00	40.45
English	8	42.88	75.75	118.63	22.88	29.88	29.38	28.63	27.13	43.88
Languages	19	43.54	83.65**	127.18	24.65	32.18*	25.00	25.53	27.06	41.06
Speech-Art-Music	10	47.50	66.50*	114.00	19.67	26.83	26.00	21.83	24.67	31.00*

NOTE: Differences between subgroup and total, * sign indicates $p < .05$; ** sign indicates $p < .01$.

TABLE X-10

DE PAUW: ALL TOTALLY CONSISTENT PATTERNS BETWEEN ENVIRONMENT AND ATTAINMENT AND BETWEEN PERSONALITY AND ATTAINMENT, GROUPED UNDER ENVIRONMENTAL VARIABLES

		IHE						W						SI						PS					
		A	S	E	C	P	H	A	S	E	C	P	H	A	S	E	C	P	H	A	S	E	C	P	H
OBJ	1			+	N	+			+	+							N		N	+	+	+		+	+
	2	-								+		+		-		-						+			
	3	N		N	N			N				-	-		+		+	+	+	N	-	N	N	-	
	4	N	+	+	+	+	+	N						N	+	+	+	+	+	N	N	+	-		
	5	N	N			N	N		N	+		+		N	N				N	+	N			+	
	6	O	N	O		+	+	O	N	O	N			O	N						N		+	+	+
	7		N				N		N	+							N		N	+					N
	8	N		N				N	O	N					+		+	+	+	N					
	9			+				+				+	+					+		N	N	+			
	10			+			+	N		+	+				N	-					N				+
	11	N						-	-	-	-	-	-	+	+	+	+	+	+	+	-				
SAT	1			N	N	N	N	+		+		+	+	-		N			N						
	2				N	N	N		N	N	N	N	N		N	N	N	N	N			N	N	N	N
	3	-	N	-		N	N	+	+	+	+	+	+	-	N	-		-		+		+	+	+	
GRADES								N		N	N	N			+					N	N	N		N	N

Key to Symbols:

+ = totally consistent with press
- = totally anti-press
N = totally consistent with personality
0 = totally anti-personality
blank = all other patterns

A = Analytical Thinking
S = Sociability
E = Emotional Stability
C = Confidence
P = Personal Relations
H = Home Satisfaction

TABLE X-10 (concluded)

SUMMARY OF PATTERNS:

	For Objectives				For Satisfactions				For Grades			
	+	-	N	0	+	-	N	0	+	-	N	0
IRE	12	1	15	2		2	10					
W	12	8	9	3	10		5				4	
SI	20	3	10	1		4	8		1			
PS	16	4	12		4		4				5	
Total	60	16	46	6	14	6	27	0	1	0	9	0

No. of	For Objectives	For Satisfactions	For Grades
Patterns	128 (48%)	47 (65%)	10 (42%)
Nonpatterns	136	25	14
Total	264	72	24

TABLE X-11

DE PAUW: ALL TOTALLY CONSISTENT PATTERNS BETWEEN ENVIRONMENT AND ATTAINMENT AND BETWEEN PERSONALITY AND ATTAINMENT, GROUPED UNDER PERSONALITY VARIABLES

		A				S				E				C				P				H			
		E	W	S	P	E	W	S	P	E	W	S	P	E	W	S	P	E	W	S	P	E	W	S	P
OBJ	1				+		+		+	+	+		+	N		N		+			+			N	+
	2	-		-							+	-	+						+						
	3	N	N		N			+	-	N			N	N		+	N		-	+	-		-	+	
	4	N	N	N	N	+		+	N	+		+	+	+		+	-	+		+		+		+	
	5	N		N	+	N	N	N	N		+							N	+		+	N		N	
	6	0	0	0		N	N	N	N	0	0				N		+	+			+	+			+
	7				+	N	N				+					N						N		N	N
	8	N	N		N		0	+		N	N					+				+				+	
	9		+		N				N	+			+						+	+			+		
	10		N					N	N	+	+	-			+							+			+
	11	N	-	+	+		-	+	-		-	+			-	+			-	+			-	+	
SAT	1		+	-						N	+	N		N				N	+			N	+	N	
	2						N	N			N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	3	-	+	-	+	N	+	N		-	+	-	+		+		+	N	+	-	+	N	+		
GRADES			N		N			+	N		N		N		N				N		N				N

SUMMARY OF PATTERNS:

For Objectives

	+	-	N	0
A	6	3	15	3
S	7	3	14	1
E	15	3	4	2
C	7	2	6	
P	14	3	1	
H	11	2	6	
Total	60	16	46	6

For Satisfactions

	+	-	N	0
A	3	3		
S	1		4	
E	3	2	5	
C	2		5	
P	3	1	6	
H	2		7	
Total	14	6	27	0

For Grades

	+	-	N	0
A			2	
S	1		1	
E			2	
C			1	
P			2	
H			1	
Total	1	0	9	0

CHAPTER XI

EASTERN WASHINGTON

Until recently, Eastern Washington State College was called Eastern Washington College of Education. In this respect it symbolizing a trend which has dominated teacher education in the postwar years: the transformation of teachers colleges or colleges of education into multipurpose institutions.

A change of title is, in the beginning, an indication of intent to expand the scope and modify the character of the institution. It is not surprising, then, that the largest group of students at Eastern Washington are still in programs of teacher preparation. Of the 115 students who filled out the CCA, 43 percent were majoring in Education, 37 percent were majoring in Liberal Arts subjects, and 20 percent were majoring in Commerce and Industrial Arts.

In common with most other state colleges, and consistent with the purposes of such institutions, Eastern Washington serves a broader cross section of high school graduates than that served by the more restrictive, selective, private liberal arts colleges described thus far in this report.

Environmental Scores

In comparison with the other colleges in this study, Eastern Washington ranks high in the Friendly, Group Welfare dimension of the CCA, a little above average on the Practical, Status-oriented dimension, a little below average on the Scientific, Independent dimension, and low on the Intellectual, Humanistic, Esthetic dimension. The CCA means and standard deviations for the various subgroups of the college are shown in Tables XI-1 and XI-2, respectively.

Differences between the subgroup means and the composite means are shown in Table XI-3. Four of the nine subgroups did not differ from the college composite on any CCA scale. These groups are Social Science majors, Education (Academic), Industrial Arts, and Health and Physical Education. The Commerce subgroup has CCA scores that are below the college average on all scales, and significantly below in some cases. The Physics group is significantly higher than the average for the college on the Scientific, Independent scale; and it is significantly below the college average on other scales. The Practical, Status-oriented press is significantly higher than the college average in the Education (Elementary) and Education (General) subgroups. These and other significant differences can be seen in the table.

Differences of three points or greater between subgroup means may also be identified in the table. On the IHE academic subscale Commerce is three points lower than Health and Physical Education; in the IHE student subscale Physical Science is three points lower than Social Science. On the W academic scale Physical Science is three points lower than Education (General), Health and Physical Education, and Industrial Arts. And on the PS academic subscale Elementary Education is three points higher than Physical Science and Education (Academic and General). There are no differences of three points or greater between any pair of subgroups on any of the administrative subscales, or on any of the subscales of the scientific, independent dimension.

On the total press scores (the 45-item scales) there are a few instances of differences of five points or greater between subgroup means. Without citing all of these in the text, one can find them in the table by noting that Commerce is lower than several of the groups on the IHE total score, that Physical Science is lower than several other groups on the W total score, and that Elementary Education and Education (General) are both higher than several other groups on the PS total score.

In general, the Physical Science and Commerce subgroups appear to be the most deviant.

Attainment Scores

The same two subgroups, Physical Science and Commerce, may also be seen, from Table XI-4, to differ significantly from the college composite in their ratings of progress toward the attainment of several objectives. Physical Science majors indicate a significantly higher progress rating on Objective 11 (science and technology) and significantly lower progress ratings on Objectives 4, 5, 7 (understanding different philosophies, social development, and citizenship). Commerce majors indicate a significantly lower progress rating on Objectives 1, 6, 8, 10 (cultural education, personal development, critical thinking, and appreciation of the arts). Two of the subgroups which did not differ from the college composite on any of the CCA scales, Social Science majors and Education (Academic) majors, also did not differ from the college composite on any of the attainment ratings.

The majors in English and Languages gave a significantly higher response to one of the satisfaction ratings, indicating most frequently in answer to the question, "How well do you like your college?," that they were "enthusiastic about it." Majors in Elementary Education also gave a significantly high response to this satisfaction item. Both groups were significantly above average in their rating of progress toward Objective 10 (appreciation of the arts). The English and Languages group was significantly lower than the college composite on Objectives 2 and 11 (vocational training, and understanding science and technology).

A few other differences may be noted in Table XI-4. Education (General) rated its progress toward Objectives 2 and 4 (vocational training, and understanding different philosophies) significantly higher than the college composite. Health and Physical Education majors gave a significantly higher rating to progress toward Objective 7 (citizenship). And Industrial Arts majors were significantly higher on Objective 2 (vocational training) and lower on Objective 10 (appreciation of the arts).

No subgroup differed significantly from the composite in its report of academic grades received.

The rank order of estimated progress toward objectives, shown in Table XI-5, indicates the highest ranks for Objectives 5 and 6 (personal and social development), with third place going to Objective 2 (vocational training. Like the other colleges described thus far, Objective 11 (understanding science and technology) ranks high in the Science subgroup but low in all others.

Relationship Between Environment and Attainment

In Table XI-6 significant relationships between environment and attainment are listed in juxtaposition. Of the 17 sets of comparisons in the table, 13 are consistent, one is neutral, and three are inconsistent. In the ten cases in which the environmental press score was significantly different from the college composite, the attainment rating was also significantly different from the college composite, in the consistent direction, in seven instances.

In Table XI-7, listing all 36 possible comparisons between environment and attainment, 24 are consistent, four are neutral, and eight are inconsistent.

Relationships Between Administrative, Academic, and Student Subscores

A glance at the 66%+ scores for Eastern Washington, shown in Table XI-8, reveals that none of the college's scores on the IHE dimension comes from items in the student subscale of the CCA, that a very large part of the college's score on the SI dimension comes from items in the administrative subscale of the CCA, that half of the total score in the PS dimension comes from items in the academic subscale of the CCA, and that each of the subscales contributes equally to the W score of the college.

In comparison with the composite of the nine colleges, Eastern Washington differs in several respects. It is clear, for example, that characteristics of the general student body, of extracurricular programs, and of informal student activities have not yet crystallized sufficiently around intellectual, humanistic, and esthetic interests to produce a high consensus about an environmental press in that direction. The present IHE emphasis comes entirely from items in the academic and administrative subscales. As to the emphasis upon independence and scientism, this comes much more strongly at Eastern Washington from the administrative than from either the academic or the student segments of the community; so that characteristics of the college from the academic subscale items contribute relatively less to the general SI emphasis than is typically the case for the composite of the nine colleges. On the other hand, practical, status-oriented characteristics of the college come proportionately more from the academic items at Eastern Washington than they do for the composite of the nine colleges. This, of course, may be a reflection of the vocational training aspects of the curriculum.

From these data one might speculate that the administrative and academic features of the college are working together to create a stronger intellectual, humanistic, esthetic emphasis, but that the student life is not yet congruent with this emphasis. On the other hand, it is only the administrative features of the college (facilities, rules and regulations, and general policies) that are pushing strongly toward greater independence and scientism, with both the faculty and the students, in a sense, appearing to lag behind. And finally, neither the administrative nor the student sources of potential press appear to be congruent with the academic sources in respect to the practical, status-oriented direction.

Personality Scores

Mean scores of students in the various subgroups on the Allport-Vernon-Lindzey Study of Values are shown in Table XI-9. No subgroup differs significantly from the total student body on the Political and Religious scales. Physical Science majors are significantly high on Esthetic values. Majors in Elementary Education are significantly low on Theoretical and Economic values. Majors in Industrial Arts are significantly high on Economic values and significantly low on Esthetic values. And Commerce majors are also significantly high on Economic values but are significantly low on both Esthetic values and Social values. No differences from the college composite on any of the six A-V-L scales were found in the subgroups of Social Science, Education (Academic), Education (General), and Health and Physical Education.

The A-V-L scales can be matched rather well with corresponding environmental press dimensions and relevant objectives. Theoretical and Esthetic values are reasonably congruent, for example, with an environmental emphasis in the Intellectual, Humanistic, Esthetic direction. The Theoretical values scale would also be relevant to the Scientific, Independent press. Both Social and Religious values appear relevant to the Friendly, Group Welfare press. And both Economic and Political values appear relevant to the Practical, Status-oriented press. When these classifications are used in relating the personality, or value scores to the attainment of relevant objectives the following results are obtained:

Relationship	No. of Examples	
Fully consistent	28	32
Mainly consistent	4	
Neutral	9	
Mainly inconsistent	5	22
Fully inconsistent	17	
	63	

The ratio of approximately three to two, consistent versus inconsistent, between personality measures and the attainment of relevant objectives can be compared to the previously reported ratio, in Table XI-7, of three to one between environmental press measures and the attainment of relevant objectives.

Patterns of Influence

By putting these two sets of data together--personality influences and environmental influences--one can see both their combined and differential impact on the attainment of relevant objectives. The following figures summarize these relationships:

When Environment and Personality are congruent, the relationships to Attainment scores on relevant objectives are:

Fully consistent	21	25
Mainly consistent	4	
Neutral	6	
Mainly inconsistent	1	5
Fully inconsistent	4	
Subtotal	36	

But, when Environment and Personality are different, the relationships to Attainment scores on relevant objectives are:

Fully consistent with Environment	11	15
Mainly consistent with Environment	4	
Neutral	3	
Mainly consistent with Personality	1	9
Fully consistent with personality	8	
Subtotal	27	
Grand total	63	

These data, as in the case of De Pauw described in the preceding chapter, are based on counting the patterns of relationship in each subgroup of the college. For example, the IHE press of the Physical Science subgroup is below the college average, the Esthetic value score of this subgroup is also below the college average (hence press and personality are congruent), and the mean scores of this subgroup on the attainment of objectives relevant to IHE press and Esthetic values, namely, Objectives 1, 4, and 10, are, in each instance, also below the college average (hence the attainment scores are fully consistent). Since there are nine subgroups in the college, and since one of the A-V-L scales is counted in two different places (Theoretical value is counted under IHE and its relevant objectives and also under SI and its relevant objectives), making seven A-V-L scales used in the analysis, the total number of possible relationships across all subgroups is 9 x 7, or 63.

The relative influence of environment and personality on attainment can also be looked at for the college as a whole, rather than cumulatively by subgroups. The following example illustrates the method of doing this. First, all students are divided into two groups--those who are in subgroups where the mean IHE score is above the college average, and those who are in subgroups whose mean IHE score is below the average for the college. Second, within each of these groups the students are further divided into two categories--those whose Esthetic scores are above the college average and those whose Esthetic scores are below the college average. And third, in each of the four groups thus produced, the mean attainment rating of the group on each of the relevant Objectives 1, 4, and 10, is computed and classified as above or below the college average. In this particular example, the analysis shows that students who are in groups whose IHE press is above average, and who have Esthetic scores that are above average, also have above average mean ratings of progress toward each of the three relevant objectives. This pattern of analysis is then repeated for all the relevant combinations of environment, personality, and attainment, with the following results being obtained:

Environment	Personality	Relevant Objectives		
IHE	Theor	1	4	10
+	+	+	+	+
+	-	-	-	+
-	+	-	-	-
-	-	-	-	o
IHE	Esth	1	4	10
+	+	+	+	+
+	-	+	+	-
-	+	o	+	+
-	-	-	-	-

Environment	Personality	Relevant Objectives		
W	Soc	5	7	
+	+	+	+	
+	-	-	+	
-	+	+	+	
-	-	-	-	
W	Relig	5	7	
+	+	+	+	
+	-	-	+	
-	+	+	+	
-	-	-	-	
SI	Theor	3	8	11
+	+	+	+	+
+	-	-	-	-
-	+	-	+	+
-	-	-	-	-
PS	Econ	2		
+	+	+		
+	-	+		
-	+	+		
-	-	-		
PS	Polit	2		
+	+	+		
+	-	+		
-	+	-		
-	-	-		

From these data several conclusions can be drawn. Students who are above average in Theoretical values make below average progress toward Objectives 1, 4, and 10, when they are members of a below average IHE press group; but students who are below average in Theoretical values make below average progress toward Objectives 1 and 4 even when they are members of an above average IHE press group. Students who are above average in Esthetic values make above average progress toward IHE related objectives regardless of the IHE press of the group they belong to; but students who are below average in Esthetic values make above average progress toward these objectives when they are members of a supportive subgroup. Students who are above average in Social and Religious values make higher than average progress toward Objectives 5 and 7 even when they are in a non-supportive subgroup. Students whose Economic values score is below average nevertheless make above average progress toward Objective 2 when they are in an environment with above average PS press. The relationships between PS press, Political values, and attainment of Objective 2 are always consistent with the press influence.

The total number of relationships or patterns of influence in the above data can be summarized as follows:

		Relevant Attainment		
Environment	Personality	+	-	o
+	+	15		
+	-	7	8	
-	+	9	5	1
-	-		14	1

The final set of analyses, shown in Tables XI-10 and XI-11, present a complete distribution of all examples of totally consistent relationships between environment, personality. and criterion variables. What is meant by totally consistent can be illustrated by the following example in which all four of the conditions described must be true: 1) Students in a group having above average IHE press, and whose scores on the A-V-L Theoretical scale are above the college average, will have above average attainment on Objective 4. 2) Students in the same above average IHE conditions, but whose A-V-L Theoretical scores are below average, will also have above average attainment on Objective 4. 3) Students in a group whose IHE press is below the college average, but whose A-V-L Theoretical score is above the college average, will have below average attainment ratings on Objective 4. 4) Students in the same below average IHE condition, and whose A-V-L Theoretical scores are also below the college average, will also have below average attainment ratings on Objective 4. When all four of these conditions are true, the pattern is totally consistent with a "press" influence, and this is symbolized in Tables XI-10 and XI-11 by a plus (+) sign. There can also be three other totally consistent patterns--one that is completely the opposite of a press pattern, one that is completely consistent with a "personality" influence, and one that is completely the opposite of a personality influence. A description of the rationale and method for this analysis is given in the Appendix.

From Table XI-10, and by noting the encircled segments of the table, one can see that progress toward Objective 7 is completely consistent with an IHE press influence, regardless of students' A-V-L scores; that progress toward Objectives 1, 6, and 9 is completely consistent with the W press, regardless of students' A-V-L scores; that progress toward Objectives 6 and 9 is completely consistent with SI press; and that progress toward Objectives 1, 2, 6, and 7 is completely consistent with PS press. Students' grades are also consistent with the SI press.

From Table XI-11, where the same data are regrouped under the A-V-L scales, one can see, for example, that relationships to Objectives 3, 8, and 11, regardless of environmental press, are always consistent with the Theoretical score on the A-V-L, but that the relationship of Theoretical values to Objectives 6 and 9 show consistent press patterns, whatever the press happens to be. Similar consistent results are highlighted in the table by the encircled segments. It is interesting to note that the relationships with two of the satisfaction items are totally consistent with an anti-Economic and Political values influence. Other relationships to satisfaction items are totally consistent with Social and Religious values.

The summaries at the bottom of each table indicate that there are about the same number of personality and anti-personality patterns related to the objectives and to the satisfaction measures, that satisfactions are mainly related to personality influences (either for or against), but that objectives and grades are mainly related to press influences. In each matrix--objectives, satisfactions, and grades--the proportion of patterns as compared with nonpatterns is substantially larger than one would expect by chance.

When only relevant combinations of press, personality, and objectives are considered, instead of all possible combinations, the number of anti-press patterns is reduced to zero and the number of anti-personality patterns is also reduced.

	Patterns				
Press	+	-	N	0	Relevant Objectives
IHE	6		1	2	1, 4, 10
W	2		2	1	5, 7
SI	7		3	2	3, 8, 11
PS	5				2
	20	0	6	5	

	Patterns				
Personality	+	-	N	0	Relevant Objectives
Esthetic			6		1, 4, 10
Theoretical	4		1		1, 4, 10
Social	2		3		5, 7
Religious			2		5, 7
Theoretical			11		3, 8, 11
Economic	1		1		2
Political	1			3	2
	8	0	24	3	

From these summaries one can note that the attainment of Objectives 1, 4, and 10 is clearly influenced by IHE press and also by students' Esthetic values. Objectives 5 and 7 are somewhat more influenced by students' Social and Religious values than by the W press. Objectives 3, 8, and 11 are clearly influenced by the SI press but even more so by students' Theoretical values. Objective 2 is almost entirely influenced by the PS press.

Summary

At Eastern Washington the number of divergent subcultures is greater than the number found in the smaller liberal arts colleges previously described, and so also is the differential attainment of various objectives. In general, the subgroups of Physical Science majors and Commerce majors were the most deviant, both with respect to environmental press and to the attainment of objectives. Although the total press in the intellectual, humanistic, esthetic direction is relatively modest, it is clear that the Theoretical and Esthetic values of some students are supportive of this emphasis, even though the student culture as a whole is not generally supportive of it. The practical, status-oriented press seems to come relatively more from the academic life than is the case in other colleges. Yet students' satisfaction with college is clearly related to a pattern completely opposite to influences from the Economic and Political values of students. Over all, the influence of environmental variables on attainment appears to be greater than the influence of personality variables. This would appear to be a good influence for greater intellectuality but perhaps less good in relation to the practical, status-oriented direction of influence.

TABLE XI-1. EASTERN WASHINGTON: CCA MEAN SCORES FOR SUBGROUPS AND TOTAL COLLEGE

Scale	Subgroups									Total College	
	Phys. Sci. (N=13)	Soc. Sci. (N=17)	Eng.-Lang. (N=13)	Educ. Acad. (N=15)	Educ. Elem. (N=9)	Educ. Gen. (N=12)	Health-Phys.El. (N=14)	Ind. Arts (N=8)	Comm. (N=14)	All Students (N=115)	Average of Subgroups
Intellectual Humanistic Esthetic											
Ad	7.46	8.71	10.00	7.93	7.22	7.75	8.50	8.13	7.36	8.17	8.12
Ac	9.00	9.18	8.38	7.60	7.78	8.42	9.50	8.50	6.36	8.32	8.30
St	4.23	7.47	7.23	6.20	6.11	6.50	6.36	5.13	5.29	6.14	6.06
Total	20.69	25.35	25.62	21.73	21.11	22.67	24.36	21.75	19.00	22.63	22.48
Friendly Group Welfare											
Ad	7.23	8.59	9.23	8.93	9.78	9.00	9.50	8.50	8.07	8.83	8.76
Ac	7.77	10.82	9.92	8.47	10.44	11.00	10.93	11.13	9.21	9.90	9.97
St	9.15	9.53	11.38	10.60	9.56	12.00	11.43	11.38	10.57	10.58	10.62
Total	24.15	28.94	30.54	38.00	29.78	32.00	31.86	31.00	27.86	29.21	29.35
Scientific Independent											
Ad	8.69	9.29	9.38	8.27	8.67	8.25	7.86	9.25	8.50	8.67	8.68
Ac	8.08	7.06	6.85	6.00	7.00	8.08	7.50	8.63	5.71	7.11	7.21
St	7.30	6.41	5.85	4.47	5.11	5.17	4.71	5.25	5.29	5.66	5.62
Total	24.08	22.76	22.08	18.73	20.78	21.50	21.07	23.13	19.50	21.44	21.51
Practical Status-oriented											
Ad	7.85	8.18	7.38	7.27	7.78	9.08	7.07	7.13	7.07	7.65	7.65
Ac	7.15	9.65	8.54	7.93	11.11	9.58	9.07	8.75	8.29	8.83	8.90
St	8.23	8.06	7.69	7.87	10.00	9.42	9.21	9.13	7.71	8.48	8.59
Total	23.23	25.88	23.62	23.07	28.89	28.08	25.36	25.00	23.07	24.96	25.14

TABLE XI-2. EASTERN WASHINGTON: CCA STANDARD DEVIATIONS FOR SUBGROUPS AND TOTAL COLLEGE

Scale	Subgroups									Total College	
	Phys. Sci.	Soc. Sci.	Eng.-Lang.	Educ. Acad.	Educ. Elem.	Educ. Gen.	Health-Phys.Ed.	Ind. Arts	Comm.	All Students	Average of Subgroups
Intellectual Humanistic Esthetic											
Ad	1.91	2.35	1.52	2.14	3.61	1.83	1.88	2.52	2.69	2.42	2.27
Ac	2.72	2.85	2.84	3.22	3.05	3.28	2.53	2.12	2.06	2.94	2.74
St	2.45	3.05	3.60	3.15	3.14	3.12	4.05	2.80	2.52	3.30	3.10
Total	5.19	6.33	6.51	7.63	8.27	6.38	5.98	5.29	5.44	6.76	6.33
Friendly Group Welfare											
Ad	1.48	1.97	1.76	2.38	2.82	2.42	1.72	1.94	2.31	2.22	2.09
Ac	2.89	1.92	3.00	2.58	2.27	2.27	1.94	1.45	2.08	2.61	2.27
St	2.18	2.61	2.43	2.58	1.34	1.53	2.82	1.87	1.76	2.44	2.12
Total	5.48	5.47	4.77	6.27	5.53	4.67	4.56	4.12	4.27	5.62	5.02
Scientific Independent											
Ad	1.94	1.71	1.98	1.65	2.21	1.59	1.92	.97	1.24	1.81	1.69
Ac	2.59	2.13	2.68	1.97	3.23	1.75	2.58	2.60	2.19	2.56	2.41
St	1.73	2.45	1.99	2.87	2.42	2.23	2.22	1.48	1.62	2.34	2.10
Total	4.73	3.51	5.37	4.49	5.35	3.71	4.37	3.72	2.72	4.57	4.22
Practical Status-oriented											
Ad	2.35	1.46	1.69	1.77	1.40	1.55	2.28	1.90	1.91	1.95	1.81
Ac	2.18	1.68	1.99	2.69	1.52	1.50	1.91	1.20	1.91	2.19	1.84
St	2.89	2.92	1.68	2.42	1.94	2.14	2.51	2.15	2.48	2.55	2.35
Total	4.79	4.40	4.14	5.13	3.93	3.57	4.08	4.00	4.33	4.76	4.26

TABLE XI-3. EASTERN WASHINGTON: DIFFERENCES BETWEEN SUBGROUP MEANS AND COMPOSITE MEAN ON CCA SCALES

Scale	Subgroups								
	Phys. Sci. (N=13)	Soc. Sci. (N=17)	Eng.-Lang. (N=13)	Educ. Acad. (N=15)	Educ. Elem. (N=9)	Educ. Gen. (N=12)	Health-Phys.Ed. (N=14)	Ind. Arts (N=8)	Comm. (N=14)
Intellectual Humanistic Esthetic									
Ad	- .71	.54	1.83**	- .24	- .95	- .42	.33	- .04	- .81
Ac	.68	.86	.06	- .72	- .54	.10	1.18	.18	-1.96**
St	-1.91*	1.33	1.09	.06	- .03	.36	.22	-1.01	- .85
Total	-1.94	2.72	2.99	- .90	-1.52	.04	1.73	- .88	-3.63*
Friendly Group Welfare									
Ad	-1.50**	- .14	.50	.20	1.05	.27	.77	- .23	- .66
Ac	-2.13*	.92	.02	-1.43	.54	1.10	1.03	1.23	- .69
St	-1.43	-1.05	.80	.02	-1.02	1.42*	.85	.80	- .01
Total	-5.06*	- .27	1.33	-1.21	.57	2.79	2.65	1.79	-1.35
Scientific Independent									
Ad	.02	.62	.71	- .40	.00	- .42	- .81	.58	- .17
Ac	.97	- .05	- .26	-1.11	- .11	.97	.39	1.52	-1.40
St	1.65*	.75	.19	-1.19	- .55	- .49	.05	- .41	- .37
Total	2.64	1.32	.64	-2.71	- .66	.06	- .37	1.69	-1.94*
Practical Status-oriented									
Ad	.20	.53	- .27	- .38	.13	1.43*	- .58	- .52	- .58
Ac	-1.68*	.82	- .29	- .90	2.28**	.75	.24	- .08	- .54
St	- .25	- .42	- .79	- .61	1.52	.94	.73	.65	- .77
Total	-1.73	.92	-1.34	-1.89	3.93*	3.12*	.40	.04	-1.89

NOTE: * sign indicates p <.05; ** sign indicates p <.01

TABLE XI-4

EASTERN WASHINGTON: DIFFERENCES BETWEEN SUBGROUP MEANS AND THE COLLEGE MEAN ON OBJECTIVES, SATISFACTIONS, AND GRADES

	N	OBJ 1	OBJ 2	OBJ 3	OBJ 4	OBJ 5	OBJ 6	OBJ 7	OBJ 8	OBJ 9	OBJ 10	OBJ 11	SAT 1	SAT 2	SAT 3	GRADES
College	107	2.16	2.13	2.14	2.41	2.05	1.81	2.30	2.25	2.27	2.50	2.52	1.84	1.97	2.12	3.30
Phys. Sci.	14	-.38	-.25	-.14	-.51**	-.49*	.04	-.47*	.17	-.04	-.27	.90**	-.16	-.03	-.30	.68
Soc. Sci.	17	.16	-.18	.08	.03	.30	.12	.11	-.06	-.04	.00	.08	-.16	-.16	-.44	-.01
Eng.-Lang.	13	.08	-.54**	-.19	-.17	.13	.06	-.03	-.17	.44	.75**	-.56**	.59**	.22	.37	.38
Educ. Acad.	15	.16	-.37	.00	.20	.26	-.12	.16	-.04	-.02	.14	-.34	-.16	.18	.12	-.49
Educ. Elem.	11	.16	.05	-.13	-.14	.14	-.01	-.25	-.11	-.18	.68**	-.03	.39*	-.03	-.06	-.06
Educ. Gen.	11	.36	.53*	.24	.61*	-.15	.31	.30	.05	-.03	.30	-.08	-.16	-.03	-.08	.08
Health-P.E.	16	.16	.38	-.03	.16	.13	-.11	.47*	.33	.10	-.33	-.15	.17	.22	-.13	-.12
Indus.Arts	9	-.27	.99**	.28	-.02	-.09	.38	.16	.39	-.02	-.50*	.23	-.16	-.17	.12	-.41
Commerce	14	-.61**	.13	-.32	-.13	-.37	-.50*	-.32	-.37*	-.27	-.88**	-.10	-.31	-.26	.20	-.62

NOTE: * sign indicates p <.05; ** sign indicates p <.01

In the top row of this table, a low score indicates a favorable rating.
In the rest of the table the minus (-) signs have their customary meaning of "less favorable."

TABLE XI-5

EASTERN WASHINGTON: RANK ORDER OF ESTIMATED PROGRESS TOWARD OBJECTIVES

	Rank	Total	Phys. Sci.	Soc. Sci.	Eng.-Lang.	Educ. Acad.	Educ. Elem.	Educ. Gen.	Health-P. E.	Ind. Arts	Comm.
Highest	1	6	11	6	6	5	6	6	2	2	2
	2	5	6	5	10	6	10	2	7	6	6
	3	2	3	1	9	1	5	1	5	3	5
	4	3	8	3	5	3	1	4	6	8	3
	5	1	9	7	1	7	2	3	8	5	4
	6	8	2	2	3	4	3	7	1	7	9
	7	9	1	8	7	8	8	5	3	9	7
	8	7	5	9	8	9	9	8	9	11	8
	9	4	7	4	4	10	4	10	4	1	11
	10	10	10	11	2	2	7	9	11	4	1
Lowest	11	11	4	10	11	11	11	11	10	10	10

NOTE: Bracketed numbers indicate tied ranks.

TABLE XI-6. EASTERN WASHINGTON: ANALYSIS OF SIGNIFICANT RELATIONSHIPS BETWEEN ENVIRONMENT AND ATTAINMENT

IHE		W		SI		PS	
Press	Progress 1, 4, 10	Press	Progress 5, 7	Press	Progress 3, 8, 11	Press	Progress 2
Phys (St) -	Phys (4) -	Phys (Ad) -	Phys (5) -	Phys (St) +	Phys (11) +	Ed g (Ad) +	Ed g (2) +
		Phys (Ac) -	Phys (7) -			Ed g (Tot.) +	
		Phys (Tot.) -					
Comm (St) -	Comm (1) -			Comm (Tot.) -	Comm (8) -	Ed e (Ac) +	-
Comm (Tot.) -	Comm (10) -					Ed e (Tot.) +	
E&L (Ad) +	E&L (10)+	Ed g (St) +	o	+	E&L (11) -	Phys (Ac) -	-
+	Ed g (4) +	+	HPE (7) +			-	E&L (2) -
-	Ed e (10) +						IA (2) +
-	IA (10) -						

NOTE: Comm = Commerce; E&L = English-Languages; Ed e = Education, Elementary; Ed g = Education, General; HPE = Health-Physical Education; IA = Industrial Arts; Phys = Physical Sciences

TABLE XI-6 (concluded)

EASTERN WASHINGTON: SUMMARY OF RELATIONSHIPS

	No. of Examples	
Environment and Attainment both significant and consistent	7	13
Environment significant and Attainment consistent	1	
Attainment significant and Environment consistent	5	
Environment significant and Attainment neutral	1	
Environment significant and Attainment inconsistent	1	3
Attainment significant and Environment inconsistent	2	
Environment and Attainment both significant but inconsistent	0	
	17	

TABLE XI-7

EASTERN WASHINGTON: "SIGN TEST" ANALYSIS OF REALTIONSHIPS BETWEEN ENVIRONMENT AND ATTAINMENT

Subgroups	IHE		W		SI		PS	
	Press	Progress 1, 4, 10	Press	Progress 5, 7	Press	Progress 3, 8, 11	Press	Progress 2
Physical Sciences	⊖	- ⊖ -	⊖	⊖⊖	⊕	+ + ⊕	⊖	-
Social Sciences	+	+ + o	-	+ +	+	+ - +	+	-
English-Languages	⊕	+ - ⊕	+	+ -	+	- - ⊖	-	⊖
Education, Academic	-	+ + +	-	+ +	-	o - -	-	-
Education, Elementary	-	+ - ⊕	+	+ -	-	- - -	⊕	-
Education, General	+	+ ⊕ +	⊕	- +	+	+ + -	⊕	⊕
Health-Physical Education	+	+ + -	+	+ ⊕	-	- + -	+	+
Industrial Arts	-	⊖ - ⊖	+	- +	+	+ + +	+	⊕
Commerce	⊖	⊖ - ⊖	-	- -	⊖	- ⊖ -	-	+

SUMMARY OF RELATIONSHIPS

Pattern	No. of Examples	
Fully consistent	17	24
Mainly consistent	7	
Neutral	4	
Mainly inconsistent	1	8
Fully inconsistent	7	
	36	

NOTE: ○ indicates a significant difference from the composite mean.

TABLE XI-8

EASTERN WASHINGTON: DIFFERENCES BETWEEN ADMINISTRATIVE, ACADEMIC, AND STUDENT SUBSCORES (66%+ METHOD)

CCA Scores Based on 66%+ Consensus

	IHE	W	SI	PS
Ad	4	9	7	4
Ac	5	9	2	9
St	0	9	2	5
Total	9	27	11	18

Differences

		Eastern Washington	Composite of Nine Colleges
IHE	Ad vs. Ac	-1	.1
	Ad vs. St	4	2.2
	Ac vs. St	5	2.1
W	Ad vs. Ac	0	0
	Ad vs. St	0	-1.3
	Ac vs. St	0	-1.3
SI	Ad vs. Ac	5	- .2
	Ad vs. St	5	2.8
	Ac vs. St	0	3.0
PS	Ad vs. Ac	-5	.3
	Ad vs. St	-1	-1.1
	Ac vs. St	4	-1.4

NOTE: Minus (-) signs indicate that the first item of the pair is lower than the second.

TABLE XI-9

EASTERN WASHINGTON: MEAN SCORES OF SUBGROUPS AND THE TOTAL COLLEGE ON THE ALLPORT-VERNON-LINDZEY STUDY OF VALUES

	N	Theoretical	Economic	Esthetic	Social	Political	Religious
Total College	103	44.23	40.92	36.83	36.81	42.47	38.77
Physical Science	14	53.07**	42.29	32.71	33.86	41.29	36.79
Social Science	17	44.94	44.65	34.76	40.24	43.18	36.76
English-Languages	13	41.08	37.62	44.54**	37.31	39.69	39.77
Education (Academic)	15	43.93	37.27	39.67	37.33	41.40	40.40
Education (Elementary)	11	39.27**	35.45**	42.64	39.64	38.45	44.55
Education (General)	11	41.64	38.45	39.45	39.64	38.36	42.64
Health-Physical Education	16	44.38	39.38	34.19	39.88	44.44	37.75
Industrial Arts	9	45.78	49.00**	31.33*	31.00	44.33	38.56
Commerce	14	45.43	50.79**	31.64**	31.29**	46.07	34.79

NOTE: * sign indicates $p < .05$; ** sign indicates $p < .01$

TABLE XI-10

EASTERN WASHINGTON: ALL TOTALLY CONSISTENT PATTERNS BETWEEN ENVIRONMENT AND ATTAINMENT AND BETWEEN PERSONALITY AND ATTAINMENT - GROUPED UNDER ENVIRONMENTAL VARIABLES

	IHE						W						SI						PS					
	T	E	A	S	P	R	T	E	A	S	P	R	T	E	A	S	P	R	T	E	A	S	P	R
OBJ 1		+		+		+	+	+		+	+	+			N	N	O		+	+		+		+
2			-	O	O	N		+	+	+	O		N	N		O	O	N	+		+	+	+	+
3	N				O		N				O			+	+	+			N	+	+	+	O	+
4		+		+	+					+			N		N					+		+	+	
5		O		N				O		N		N			-						+	N		
6	+		+				+	+	+		+		+	+	+	+	+		+	+	+		+	
7	+	+	+	+	+			+			+				O			N	+	+	+	+	+	
8	N	N	-	O		N	N			O			N			O		N	N	+			+	
9	+					+	+	+		+	+	+	+	+		+	+	+		O				
10		O	N		O		+	O	N	+	O		+	O	N	N	O			O	N	N	O	N
11	N	-			-	-	N			O			N	+	+	O	+	+	N		O			
SAT 1		O			O	N	+	O		+	O		O	O	N	N	O	N		O	N	N	O	N
2		O		N	O			O		N	O			O	N	N	O	N		O	N	N	O	
3	-			N		N						N	+					N		-				N
GRADES			+	+	+					+				+	+	+	+	+	N		N		-	

Key to Symbols:

+ = totally consistent with press
- = totally anti-press
N = totally consistent with personality
0 = totally anti-personality
blank = all other patterns

T = Theoretical
E = Economic
A = Esthetic
S = Social
P = Political
R = Religious

TABLE XI-10 (concluded)

SUMMARY OF PATTERNS:

For Objectives

	+	-	N	O
IHE	15	5	8	7
W	22	0	6	7
SI	18	1	13	8
PS	28	0	7	5
Total	83	6	34	27

For Satisfactions

	+	-	N	O
IHE	0	1	4	4
W	2	0	2	4
SI	1	0	7	5
PS	0	1	6	4
Total	3	2	19	17

For Grades

	+	-	N	O
IHE	3			
W	1			
SI	5			
PS		1	2	
Total	9	1	2	0

No of.	For Objectives	For Satisfactions	For Grades
Patterns	150 (57%)	41 (57%)	12 (50%)
Nonpatterns	114	31	12
Total	264	72	24

TABLE XI-11

EASTERN WASHINGTON: ALL TOTALLY CONSISTENT PATTERNS BETWEEN ENVIRONMENT AND ATTAINMENT AND BETWEEN PERSONALITY AND ATTAINMENT - GROUPED UNDER PERSONALITY VARIABLES

	Theoretical				Economic				Esthetic				Social				Political				Religious			
	H	W	S	P	H	W	S	P	H	W	S	P	H	W	S	P	H	W	S	P	H	W	S	P
OBJ 1		+		+	+	+		+			N		+	+	N	+		+	0		+	+		+
2			N	+		+	N		-	+		+	0	+	0	+	0	0	0	+	N	N		+
3	N	N		N			+	+			+	+			+	+	0	0		0				+
4			N		+			+			N		+	+		+	+			+				
5					0	0					-	+	N	N		N						N		
6	+	+	+	+		+	+	+	+	+	+	+			+			+	+	+				
7	+			+	+			+	+	+	0	+		+		+	+	+		+			N	
8	N	N	N	N	N			+	-				0	0	0					+	N		N	
9	+	+	+			+	+					0		+	+			+	+		+	+	+	
10		+	+		0	0	0	0	N	N	N	N		+	N	N	0	0	0	0				N
11	N	N	N	N	-		+				+			0	0	0	-		+		-		+	
SAT 1		+	0		0	0	0	0			N	N		+	N	N	0	0	0	0	N		N	N
2					0	0	0	0			N	N	N	N	N	N	0	0	0	0			N	
3	-		+					-					N								N	N	N	N
GRADES				N			+		+		+	N	+	+	+		+		+	-			+	

SUMMARY OF PATTERNS:

	For Objectives				For Satisfactions				For Grades			
	+	-	N	0	+	-	N	0	+	-	N	0
Theor	14	0	13	0	2	1	0	1			1	
Econ	17	1	2	6	0	1	0	8	1			
Esth	13	3	6	2	0	0	4	0	2		1	
Soc	16	0	6	8	1	0	7	0	3			
Polit	14	1	0	11	0	0	0	8	2	1		
Relig	9	1	7	0	0	0	8	0	1			
Total	83	6	34	27	3	2	19	17	9	1	2	0

CHAPTER XII

MISSISSIPPI

The University of Mississippi first opened for instruction in 1848. In addition to its original liberal arts college, it has established seven professional schools--Law, Engineering, Education, Medicine, Pharmacy, Commerce, and Nursing. Today, the College of Liberal Arts and the School of Commerce constitute the two largest programs, with Education third and Engineering fourth.

In Mississippi, as in many southern and midwestern states, the University is generally regarded as the prestige institution within the state. Over the years, the University of Mississippi has consistently had a student body whose level of academic aptitude, as judged by the ACE Psychological Examinations, ranked well above average on national norms.

Environmental Scores

CCA scores for the University as a whole reveal a profile of strong press in the practical, status-oriented, and group welfare directions and of relatively low press in the intellectual, humanistic, esthetic and the scientific, independent directions. Table XII-1 reports these mean scores for the University and its subgroups; Table XII-2 reports the standard deviations; and Table XII-3 shows the differences between subgroup means and the composite mean.

From the standard deviations one can see that there is less unanimity of opinion about the IHE and W aspects of the environment than about the SI and PS aspects of the environment. In the former, two thirds of the scores fall within a range of five to seven points on the subscales and within a range of 12 to 15 points on the total scales; in the latter, two thirds of the scores fall within a range of four to five points on the subscales and within a range of nine to ten points on the total scales.

The size of the sample tested at Mississippi probably accounts, in part, for the fact that there are many significant differences between subgroup means and the college composite. Of the 96 differences reported in Table XII-3, 25 are statistically significant. Most of the significant differences occur in the Scientific, Independent scales and the Practical, Status-oriented scales; and most of these also involve the Commerce subgroup and the Math-Chemistry subgroup.

Looking at the actual magnitude of differences between any two subgroups, one finds that on the 15-item subscales there are no differences of three points or greater between any groups on the IHE, W, and PS variables. On the SI variable the Math-Chemistry group is more than three points higher than the Commerce group on the academic subscale, and than the Humanities group on the student subscale. On the total scores, or 45-item scales, differences between groups of five points or more occurred as follows: Engineering was higher than Math-Chemistry on the W scale; Math-Chemistry was higher than both Humanities and Commerce on the SI scale; and Math-Chemistry was lower than both Commerce and Education on the PS scale.

In general, the press scores in Pharmacy and Engineering are alike; the scores in Education and Commerce are alike but mostly opposite to Pharmacy and Engineering; and the two liberal arts groups of Humanities and Math-Chemistry are alike in IHE and W, but opposite in SI and PS.

Attainment Scores

In Table XII-4, the differences between subgroups and the composite are shown for the progress ratings on the various objectives. Every subgroup differs significantly from the composite in its rating of progress toward Objective 11 (science and technology). No differences between subgroups and the composite occurred on Objectives 6 and 8 (personal development and critical thinking).

The Math-Chemistry subgroup was significantly above the college average in estimated progress toward preparation for further scholarly work and understanding science and technology, and significantly below the college average in its estimated progress toward personal development and effective citizenship. The Humanities group was significantly high in its rated progress toward acquiring a broad cultural education, understanding different philosophies, and appreciation of the arts; and correspondingly low on the objectives referring to job preparation and understanding science and technology. Pharmacy was significantly high with reference to job training and science and technology, and low with reference to effective speech and writing. Engineering was significantly high on Objectives 2, 3, and 11 (job training, preparation for further scholarly work, and understanding science and technology), and low on Objective 10 (appreciation of the arts). Education differed from the college as a whole only on Objective 11 (science and technology), being below the college composite on this item. Commerce was also below the college average on Objective 11, but significantly higher than the average on Objectives 5 and 7 (social development and effective citizenship).

In the various ratings of satisfactions with college life no group differed significantly from the college average. In college grades, however, the two liberal arts subgroups, Math-Chemistry and Humanities, reported higher than average grades and the Commerce subgroup reported lower than average grades.

The rank order of the various attainment ratings on the eleven objectives, shown in Table XII-5, indicates that the highest ratings were given to personal and social development, preparation for effective citizen participation, and effective speech and writing. There is considerable variation in the rank order within the subgroups, with the exception of Objective 6 (personal development), which always ranks among the highest four, and of Objective 4 (understanding different philosophies and ways of life), which always ranks among the lowest four.

Relationships Between Environment and Attainment

In Tables XII-6 and XII-7 the significant and other relationships between environment and attainment are shown. The unusual element in these tables is the fact that on the practical, status-oriented variable all relationships between the press of the subgroup and the progress of its members toward the relevant objective (vocational training) are negative. No explanation for this large reversal is at hand. On all the other press variables the majority of relationships are positive--that is, consistent with the attainment of relevant goals. Press and progress are most frequently consistent in relation to the scientific, independent variable, and next most frequently in relation to the friendly, group welfare variable.

Relationships Between Administrative, Academic, and Student Subscores

Mississippi's CCA scores, determined by the 66%+ method of consensus and reported in Table XII-8, show a pattern similar to that obtained by using mean scores--but with one exception. By the consensus method of scoring, Mississippi's score is not as high, relative to the other schools, on the W variable, as it is by the more common mean score procedure. It seems probable that the 66%+ score for the welfare emphasis is lower than an estimated "true" score for Mississippi would be. Of the 17 items counted in the W score, all had been answered by a consensus of 71 percent or higher. Thus, all items counted in the score are sufficiently far above the cutting line of 66 percent that none would be apt to drop below the 66 percent line by chance. On the other hand, there were seven items on which the percentages were not more than three points below 66 percent, and thus, by chance, could easily count in the score. Mississippi's "true" score on the W variable would lie somewhere between 17 and 24, even though its "obtained" score is at 17 or the low end of this potential range.

In the relative contribution of administrative, academic, and student segments to the various total scores, Mississippi, like most of the other colleges, has a few unusual characteristics. None of the IHE score comes from items in the student subscale, and only one item in its score on the SI variable comes from the student subscale. In the IHE emphasis, both administrative and academic segments of the University are jointly applying pressure, so to speak, on the students. In the SI emphasis, virtually all the pressure comes from the academic area, with no corresponding press from either the administration or students. On the W emphasis, the Ole Miss score comes proportionately more from the student items than is the case in the composite of the nine schools.

Personality Scores

Mississippi students were given the Stern Activities Index. The mean raw scores on each of the 30 scales were obtained, and then were combined into certain patterns or clusters which appeared to be most relevant to the various press categories of the CCA. These AI patterns differ from those used by Stern.

Table XII-9, which reports the subgroup and composite mean scores on the derived AI clusters, also indicates which AI scales have been combined to form these clusters. The presumed relevance to the CCA is as follows: Reflectiveness is relevant to the Intellectual, Humanistic, Esthetic press; Determination and Dominance are relevant to the Scientific, Independent press; Welfare is relevant to the Friendly, Group Welfare press; and Deference and Exhibitionism are relevant to the Practical, Status-oriented press.

On these several AI clusters neither the Pharmacy students nor the Engineering students differ from the college composite. Education students are significantly higher than the college composite on Deference and Welfare. Commerce students are significantly lower on Reflectiveness and higher on Exhibitionism. Humanities students are significantly higher than the composite on Reflectiveness. And Math-Chemistry students are significantly higher on Determination, and significantly lower on Welfare and Exhibitionism.

When these personality measures are grouped in relation to relevant objectives, as in the "sign" test analysis between environment and attainment in Table XII-7, the following consistencies and inconsistencies are obtained:

Fully consistent	17	19
Mainly consistent	2	
Neutral	3	
Mainly inconsistent	3	14
Fully inconsistent	11	
	36	

This result is quite similar to the summary in Table XII-7, indicating that the characteristics of students, as well as the characteristics of their environment, are related to the attainment of presumably relevant goals.

Patterns of Influence

By combining all these sets of data--CCA scores, AI cluster scores, and mean attainment ratings of objectives--into relevant groups, the differential influences of personality and environment are sorted out as follows:

When Environment and Personality are congruent, the relationships to Attainment ratings of relevant objectives are:

Fully consistent	10	13
Mainly consistent	3	
Neutral	1	
Mainly inconsistent	0	9
Fully inconsistent	9	

But, when Environment and Personality are different, the relationships to Attainment ratings of relevant objectives are:

Fully consistent with Environment	2	5
Mainly consistent with Environment	3	
Neutral	2	
Mainly consistent with Personality	0	6
Fully consistent with Personality	6	
	36	

In the above data, two facts deserve special comment. First, even when environmental and personality characteristics are mutually supportive, there are many instances in which the attainment of relevant objectives is inconsistent. There are nine subgroup examples in which this inconsistency is true, compared to 13 examples in the consistent, or expected, direction. All of these inconsistencies occurred in relation to attainment of Objective 2. Second, relationships to attainment are more often fully consistent with personality scores than with environment scores.

In the next set of comparisons the college as a whole, rather than the separate subgroups, is the basic unit of analysis. First, all students are divided into two press categories--those who are in above average press groups and those who are in below average press groups. Within each of these two press categories, the students are further subdivided into two personality groups--those whose scores are above average and those whose scores are below average. Then, for each of the four groups obtained in this manner, the mean rating of progress toward objectives is computed and classified as above or below the college composite mean. The results of these analyses for the relevant combinations of environment, personality, and objectives are as follows:

Environment	Personality	Attainment of Objectives		
IHE	Refl	1	4	10
+	+	+	+	+
+	-	-	-	-
-	+	-	+	+
-	-	+	-	-
W	Welf	5	7	
+	+	+	+	
+	-	-	+	
-	+	+	-	
-	-	-	-	
SI	Detr	3	8	11
+	+	+	+	+
+	-	+	-	+
-	+	+	+	-
-	-	-	-	-
SI	Domn	3	8	11
+	+	+	+	+
+	-	+	+	+
-	+	-	+	-
-	-	-	-	-
PS	Defc	2		
+	+	-		
+	-	-		
-	+	+		
-	-	+		
PS	Exhb	2		
+	+	-		
+	-	-		
-	+	+		
-	-	+		

In general, attainment of Objectives 1, 4, and 10 is more often congruent with the "Reflectiveness" personality variable than with IHE environmental variable. The attainment of Objectives 3, 8, and 11 is more often congruent with the SI environmental variable than with the "Dominance" personality variable. When the W environmental variable and the "Welfare" personality variable are congruent, the attainment of Objectives 5 and 7 is consistent; but when the variables are not congruent the attainment is mixed. With respect to Objective 2, congruence between environment and personality variables is associated with attainment in the opposite direction; but when the variables are not congruent, attainment is consistent with the personality variable.

Adding together all of the relevant combinations of pluses and minuses, one gets the following pattern for the college as a whole:

		Relevant Attainment		
Environment	Personality	+	-	o
+	+	11	2	
+	-	6	7	
-	+	8	5	
-	-	3	10	

A more diagnostic and rigorous analysis of the patterns of influence is provided by the information shown in Tables XII-10 and XII-11. The method of obtaining this information is explained fully in the Technical Note in the Appendix. Basically, it is similar to the analyses just described in that the students are divided into four groups and the attainment ratings of these four groups are classified as above or below average; but then it proceeds beyond this point to identify only those patterns that are totally consistent with a press influence, or a personality influence, or totally the opposite of either. A totally consistent press influence, for example, would be as follows:

Environment	Personality	Attainment
+	+	+
+	-	+
-	+	-
-	-	-

In short, for all of the four possible combinations between environment and personality, the attainment is always consistent with the environment.

Tables XII-10 and XII-11 show the location and type of totally consistent patterns--with all personality and environmental variables in relation to all criterion variables of objectives, satisfactions, and grades. In the first of these two tables, the major grouping of data is under the four environmental press dimensions. The enclosed segments of the table identify the most significant patterns. Progress toward Objectives 3 and 11 is consistently associated with IHE press regardless of students' personality scores; and progress toward Objective 7 is consistently related to an anti-IHE press. The Welfare press is related to Objective 7 and an anti-Welfare press is related to Objective 11, regardless of students' personality scores. SI is related to Objectives 2, 3, and 11 but anti-SI press is related to Objectives 1, 5, and 9, regardless of student characteristics. Similar anti-press relationships are indicated for Objectives 2, 3, and 11 with the PS emphasis. There are no predominant patterns in relation to the various satisfaction items.

Grades are consistently associated with IHE press and with the opposite of Welfare press, regardless of student characteristics. In the second table the results are grouped under the six personality test dimensions. Here one can see that Objective 4 is associated with the "Reflectiveness" scores regardless of environmental press. Objective 6 is associated with the "Welfare," "Determination," and "Exhibitionism" scales regardless of environmental press. Objective 8 is also similarly related to the "Determination" scale. Objective 10 is related to "Reflectiveness" scores regardless of environmental emphases. Although grades are not predominantly related to any of the personality scores, two of the satisfaction items are each significantly related to the personality dimensions of "Welfare" and "Exhibitionism."

The summaries of these tables clearly show that press and anti-press patterns are about equally related to all the criterion measures--objectives, satisfactions, and grades. In respect to satisfactions, the relationship to press is sharply split, with W and PS on the one side and anti-IHE and anti-SI on the other side. A similar split occurs in respect to grades, with a clear relationship to IHE press and to the opposite of W press. The personality dimensions show another sharp cleavage, with most factors about equally related to press or anti-press influences, but with the characteristics of "Welfare" and "Exhibitionism" accounting for all of the need, or personality, patterns.

Tables XII-10 and XII-11, it will be recalled, show patterns of relationships among all measures of environment, personality, and attainment. When only relevant relationships are counted, the number of patterns is, of course, considerably reduced; but one also gets a proportionately smaller number of anti-press patterns. The patterns of influence between environmental press and relevant objectives are as follows:

	Patterns				
Environment	+	-	N	0	Relevant Objectives
IHE	5		7		1, 4, 10
W	10		1		5, 7
SI	11		1		3, 8, 11
PS		6			2
	26	6	9	0	

The patterns of influence between personality characteristics and relevant objectives are as follows:

	Patterns				
Personality	+	-	N	0	Relevant Objectives
Refl	1	1	8		1, 4, 10
Welf	1		4		5, 7
Detr	3	2	4		3, 8, 11
Domn	4	3	1		3, 8, 11
Defc	1	1	1		2
Exhb	2	1		1	2
	12	8	18	1	

In the first of these two summaries, the number of possible relationships is 54, with 26 being consistent press patterns, six anti-press patterns, nine consistent personality patterns, and the remaining 13 being nonpatterns. The proportion of patterns that are totally consistent is two and one-half times greater than one would expect by chance. The proportion of totally consistent press patterns is seven times greater than chance expectancy. In the second of the two summaries, in which some objectives are related to more than one personality variable, the total possible number of relationships is 52, with 39 being consistent patterns and the remaining 13 being nonpatterns. The proportion of totally consistent press patterns is three times greater than chance; and the proportion of totally consistent personality patterns is almost five times greater than chance. The probability of getting any one type of pattern by chance is 1/14 of the total.

Summary

The over-all characteristic of Ole Miss is clearly indicated by its strong press in the practical, status-oriented direction, by its cohesive, group welfare emphasis, and by students whose characteristics fit and are satisfied with these emphases. Satisfaction with college life is most influenced by the W and PS dimensions of environmental press, and by the "Welfare" and "Exhibitionism" dimensions of students' personality. And satisfaction is further associated with an opposite or anti-press in both the IHE and the SI directions. Progress toward the attainment of intellectual objectives, both humanistic and scientific, varies considerably by academic subgroups, however. The Humanities subgroup reports higher than average progress toward humanistic objectives; the Math-Chemistry and Engineering subgroups report higher than average progress toward related scholarly and scientific objectives. Since items from the student subscales of the CCA contribute very little to either the IHE or the SI press of the university, the achievement of objectives relevant to IHE and SI emphases is mainly attributable to faculty and academic pressures, supplemented by some natural selection of students into these subgroups who have characteristics supportive of these intellectual demands or at least less supportive of opposing demands.

TABLE XII-1. MISSISSIPPI: CCA MEAN SCORES FOR SUBGROUPS AND TOTAL UNIVERSITY

Scale	Subgroups						Total University	
	Pharmacy (N=32)	Engineering (N=22)	Education (N=29)	Commerce (N=94)	Humanities (N=35)	Math-Chemistry (N=36)	All Students (N=248)	Average of Subgroups
Intellectual Humanistic Esthetic								
Ad	7.19	7.18	6.55	7.07	6.26	6.83	6.89	6.85
Ac	8.88	8.45	6.86	6.81	8.54	8.47	7.71	8.00
St	6.81	7.50	6.79	5.49	6.17	5.69	6.12	6.41
Total	22.88	23.14	20.21	19.37	20.97	21.00	20.72	21.26
Friendly Group Welfare								
Ad	7.81	9.05	9.00	8.00	8.06	7.14	8.07	8.18
Ac	8.56	10.23	8.93	9.12	8.43	8.56	8.94	8.97
St	10.56	11.00	11.10	10.07	9.60	9.06	10.13	10.07
Total	26.94	30.27	29.03	27.19	26.09	24.75	27.14	27.22
Scientific Independent								
Ad	6.25	6.27	6.69	6.84	6.17	6.42	6.54	6.44
Ac	7.88	7.95	7.21	6.07	7.40	9.69	7.32	7.70
St	7.84	7.95	5.97	6.03	5.46	8.53	6.71	6.96
Total	21.97	22.18	19.86	18.95	19.03	24.64	20.57	21.10
Practical Status-oriented								
Ad	9.09	9.95	10.55	10.29	11.03	10.08	10.20	10.17
Ac	9.38	9.50	10.17	10.51	9.57	8.03	9.74	9.53
St	11.09	10.09	12.28	12.15	11.66	9.50	11.40	11.13
Total	29.56	29.55	33.00	32.95	32.26	27.61	31.34	30.83

TABLE XII-2. MISSISSIPPI: CCA STANDARD DEVIATIONS FOR SUBGROUPS AND TOTAL UNIVERSITY

Scale	Subgroups						Total University	
	Pharmacy	Engineering	Education	Commerce	Humanities	Math-Chemistry	All Students	Average of Subgroups
Intellectual Humanistic Esthetic								
Ad	2.58	2.41	2.75	2.14	2.37	2.19	2.36	2.41
Ac	2.72	2.48	3.36	2.98	3.27	2.90	3.12	2.95
St	4.45	3.30	3.56	2.70	3.65	3.33	3.42	3.50
Total	8.44	6.98	8.28	6.45	7.26	6.95	7.32	7.39
Friendly Group Welfare								
Ad	2.52	2.36	1.97	2.42	2.18	2.79	2.47	2.37
Ac	2.50	2.13	3.18	2.72	3.05	2.58	2.77	2.69
St	2.54	2.65	2.90	2.38	2.97	2.80	2.72	2.71
Total	6.42	5.51	6.31	5.88	6.54	6.64	6.36	6.22
Scientific Independent								
Ad	2.09	1.48	1.91	2.07	2.25	1.89	2.03	1.95
Ac	2.03	1.97	2.43	2.36	2.19	1.96	2.53	2.16
St	1.92	1.74	2.51	2.42	2.69	2.10	2.57	2.23
Total	4.21	3.85	5.17	4.89	4.62	3.94	5.03	5.29
Practical Status-oriented								
Ad	1.61	1.43	2.03	1.66	1.75	1.95	1.82	1.74
Ac	2.10	1.90	2.02	1.99	2.85	2.59	2.38	2.24
St	2.35	3.18	1.76	2.03	2.37	3.72	2.71	2.57
Total	3.51	4.04	4.15	4.21	4.94	6.37	5.02	4.54

TABLE XII-3. MISSISSIPPI: DIFFERENCES BETWEEN SUBGROUP MEANS AND COMPOSITE MEAN ON CCA SCALES

Scale	Subgroups					
	Pharmacy (N=32)	Engineering (N=22)	Education (N=29)	Commerce (N=94)	Humanities (N=35)	Math-Chemistry (N=36)
Intellectual Humanistic Esthetic						
Ad	.30	.29	- .34	.18	- .63	- .06
Ac	1.17*	.74	- .85	- .90**	.83	.76
St	.69	1.38	.67	- .63	.05	- .43
Total	2.16	2.42	- .51	-1.35	.25	.28
Friendly Group Welfare						
Ad	- .26	.98	.93**	- .07	- .01	- .93
Ac	- .38	1.29**	- .01	.18	- .51	- .38
St	.43	.87	.97	- .06	- .53	-1.07*
Total	- .20	3.13*	1.89	.05	-1.05	-2.39
Scientific Independent						
Ad	- .29	- .27	.15	.30	- .37	- .12
Ac	.56	.63	- .11	-1.25**	.08	2.37**
St	1.13**	1.24**	- .74	- .68*	-1.25**	1.82**
Total	1.40	1.61	- .71	-1.62**	-1.54	4.07**
Practical Status-oriented						
Ad	-1.12**	- .26	.34	.08	.82**	- .13
Ac	- .36	- .24	.43	.77**	- .17	-1.71**
St	- .30	-1.30	.89*	.76**	.27	-1.89**
Total	-1.78**	-1.79	1.66	1.61**	.92	-3.73**

NOTE: * sign indicates p <.05; ** sign indicates p <.01

TABLE XII-4

MISSISSIPPI: DIFFERENCES BETWEEN SUBGROUP MEANS AND THE UNIVERSITY MEAN ON OBJECTIVES, SATISFACTIONS, AND GRADES

		OBJ	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ	SAT	SAT	SAT	GRADES
	N	1	2	3	4	5	6	7	8	9	10	11	1	2	3	
University	236	2.41	2.30	2.25	2.71	2.00	1.89	2.01	2.12	2.05	2.58	2.53	1.78	1.85	1.89	3.63
Pharmacy	27	-.26	.74**	-.32	-.29	-.15	.00	.12	-.03	-.39*	-.16	.64**	-.03	.15	-.11	-.41
Engineering	18	-.20	.80**	.58**	-.29	.06	.00	.01	.34	.05	-.42**	.97**	-.05	.13	.11	.24
Education	25	.21	-.06	-.23	.11	-.08	-.23	.21	-.16	-.03	.22	-.47*	.06	.05	.01	.27
Commerce	96	.00	-.01	-.23	-.04	.22*	.06	.25*	-.06	.11	-.21	-.42**	.08	.02	.13	-.51**
Humanities	43	.34*	-.77**	-.12	.41**	.07	.15	-.29	.03	.17	.67**	-.33*	-.01	-.24	.03	.63**
Math-Chem.	39	-.13	.04	.48**	.04	-.41*	-.03	-.50**	..09	-.05	.20	.99**	-.19	.00	-.29	.73**

NOTE: * sign indicates p <.05; ** sign indicates p <.01

In the top row of this table, a low score indicates a favorable rating.
In the rest of the table the minus (-) signs have their customary meaning of "less favorable."

TABLE XII-5

MISSISSIPPI: RANK ORDER OF ESTIMATED PROGRESS TOWARD OBJECTIVES

	Rank	Total	Pharmacy	Engineering	Education	Commerce	Humanities	Math-Chemistry
Highest	1	6	2	2	7	7	6	11
	2	5	6	11	5	5	9	3
	3	7	7	3	9	6	10	6
	4	9	11	8	6	9	5	8
	5	8	3	6	1	8	1	9
	6	3	5	5	8	2	8	2
	7	2	8	7	2	1	4	10
	8	1	9	9	10	3	7	5
	9	11	1	1	3	4	3	7
	10	10	10	4	4	10	11	1
Lowest	11	4	4	10	11	11	2	4

NOTE: Bracketed numbers indicate tied ranks.

TABLE XII-6. MISSISSIPPI: ANALYSIS OF SIGNIFICANT RELATIONSHIPS BETWEEN ENVIRONMENT AND ATTAINMENT

IHE		W		SI		PS	
Press	Progress 1, 4, 10	Press	Progress 5, 7	Press	Progress 3, 8, 11	Press	Progress 2
Phar (Ac) +	-	M-C (St) -	M-C (5) -	Phar (St) +	Phar (11) +	Phar (Ad) -	Phar (2) +
			M-C (7) -			Phar (Tot.) -	
Comm (Ac) +	-						
		Engr (Ac) +		Engr (St) +	Engr (3) +		
			+				
		Engr (Tot.) +			Engr (11) +		
						Hum (Ad) +	Hum (2) -
	Hum (1) +			Comm (Ac) -	Comm (11) -		
+	Hum (4) +			Comm (St) -			
	Hum (10) +			Comm (Tot.) -			
		Educ (Ad) +	o			Educ (St) +	-
+	Engr (10) -						
				M-C (Ac) +	M-C (3) +	Comm (Ac) +	
			Comm (5) +				
		+		M-C (St) +	M-C (11) +	Comm (St) +	-
			Comm (7) +				
				M-C (Tot.) +		Comm (Tot.) +	
				Hum (St) -	Hum (11) -	M-C (Ac) -	
						M-C (St) -	+
						M-C (Tot.) -	
				-	Educ (11) -		
						-	Engr (2) +

NOTE: Hum = Humanities; M-C = Math-Chemistry

TABLE XII-6 (concluded)

MISSISSIPPI: SUMMARY OF RELATIONSHIPS

	No. of Examples	
Environment and Attainment both significant and consistent	6	11
Environment significant and Attainment consistent	2	
Attainment significant and Environment consistent	3	
Environment significant and Attainment neutral	1	
Environment significant but Attainment inconsistent	4	8
Attainment significant but Environment inconsistent	2	
Environment and Attainment both significant but inconsistent	2	
	20	

TABLE XII-7

MISSISSIPPI: "SIGN TEST" ANALYSIS OF RELATIONSHIPS BETWEEN ENVIRONMENT AND ATTAINMENT

Subgroups	IHE		W		SI		PS	
	Press	Progress 1, 4, 10	Press	Progress 5, 7	Press	Progress 3, 8, 11	Press	Progress 2
Pharmacy	⊕	- - -	-	- +	⊕	+ - ⊕	⊖	⊕
Engineering	+	- - ⊖	⊕	+ +	⊕	⊕ + ⊕	-	⊕
Education	-	+ + +	⊕	- +	-	- - ⊖	⊕	-
Commerce	⊖	o - -	+	⊕⊕	⊖	- - ⊖	⊕	-
Humanities	⊕	⊕⊕⊕	-	+ -	⊖	- + ⊖	⊕	⊖
Math-Chemistry	+	- + +	⊖	⊖⊖	⊕	⊕ + ⊕	⊖	+

SUMMARY OF RELATIONSHIPS

Pattern	No. of Examples	
Fully consistent	8	12
Mainly consistent	4	
Neutral	3	
Mainly inconsistent	0	9
Fully inconsistent	9	
	24	

NOTE: ○ indicates a significant difference from the composite mean.

TABLE XII-8

MISSISSIPPI: DIFFERENCES BETWEEN ADMINISTRATIVE, ACADEMIC, AND STUDENT SUBSCORES (66%+ METHOD)

CCA Scores Based on 66%+ Consensus

	IHE	W	SI	PS
Ad	5	5	1	9
Ac	4	4	6	9
St	0	8	1	11
Total	9	17	8	29

Differences

		Mississippi	Composite of Nine Colleges
IHE	Ad vs. Ac	1	.1
	Ad vs. St	5	2.2
	Ac vs. St	4	2.1
W	Ad vs. Ac	1	0
	Ad vs. St	-3	-1.3
	Ac vs. St	-4	-1.3
SI	Ad vs. Ac	-5	- .2
	Ad vs. St	0	2.8
	Ac vs. St	5	3.0
PS	Ad vs. Ac	0	.3
	Ad vs. St	-2	-1.1
	Ac vs. St	-2	-1.4

NOTE: Minus (-) signs indicate that the first item of the pair is lower than the second.

TABLE XII-9

MISSISSIPPI: MEAN SCORES OF SUBGROUPS AND THE TOTAL UNIVERSITY ON PERSONALITY SCALES DERIVED FROM THE STERN ACTIVITIES INDEX

Subgroups	N	Activities Index Clusters					
		Refl	Detr	Domn	Welf	Defc	Exhb
Total University	262	23.37	18.76	19.29	19.92	27.34	14.63
Pharmacy	31	21.58	17.35	17.39	20.71	27.35	12.87
Engineering	22	22.50	18.77	20.45	18.41	27.09	12.82
Education	30	24.33	18.40	18.00	23.27**	29.90*	16.73
Commerce	96	21.63*	18.29	20.02	20.02	26.81	15.96*
Humanities	44	27.86**	19.43	18.14	20.48	28.41	15.32
Math-Chemistry	39	23.74	20.54*	20.62	16.72**	25.62	11.36**

KEY: Refl (Reflectiveness) = Humanism, Reflectiveness, Understanding, Ego Achievement
Detr (Determination) = Achievement, Energy, Counteraction
Domn (Dominance) = Fantasied Achievement, Aggression, Scientism, Dominance
Welf (Welfare) = Nurturance, Succorance, Affiliation
Defc (Deference) = Practicality, Order, Deference, Abasement, Adaptation
Exhb (Exhibitionism) = Play, Sex, Exhibitionism

NOTE: * sign indicates $p < .05$; ** sign indicates $p < .01$

TABLE XII-10

MISSISSIPPI: ALL TOTALLY CONSISTENT PATTERNS BETWEEN ENVIRONMENT AND ATTAINMENT AND BETWEEN PERSONALITY AND ATTAINMENT, GROUPED UNDER ENVIRONMENTAL VARIABLES

	IHE						W						SI						PS					
	Refl	Welf	Detr	Domn	Defc	Exhb	Refl	Welf	Detr	Domn	Defc	Exhb	Refl	Welf	Detr	Domn	Defc	Exhb	Refl	Welf	Detr	Domn	Defc	Exhb
OBJ 1			N		N				N			N	-	-		-	-	-	+	+		+	+	+
2		N			N	O		+				+	+	+	+	+	+	+	-	-	-	-	-	-
3	+	+	+	+	+	+		-			-		+	+		+	+	+	-	-		-	-	-
4	N	N	N	+		N	N		-	-		N	N		-	-	-	-	N		+	+	+	
5	-	N	-	-	-		+	N	+	+	+		-		-	-	-		+		+	+	+	+
6		N	N			N		N	N			N		N	N	N		N		N	N	N		
7	-		-	-	-	-	+	+	+	+	+	+	-	N	-	-	-		+	N	+	+	+	N
8	N		N				N		N	N	N	O			N						N			
9	-	-	N				+	+	N				-	-		-	-	-	+			+	+	+
10	N	+		+	+	+	N	-		-	-	-	N	-			-	-	N				+	+
11	+	+	+	+	+	+	-	-	-	-	-	-	+	+	+	+	+	+	-	-	-	-	-	-
SAT 1	-			-		N	+		+	+	+	N			-	-	-				+	+	+	
2	O	N						N				N		N				N		N				N
3	-	N	-	-	-	N	+	N	+	+	+	N	-	N		-	-	N	+	N	+	+	+	N
GRADES	+	+	+	+	+	+	-	-	-	-	-	-		+	N		+			-	N		-	

Key to Symbols:

+ = totally consistent with press
- = totally anti-press
N = totally consistent with personality
0 = totally anti-personality

TABLE XII-10 (concluded)

SUMMARY OF PATTERNS:

	For Objectives				For Satisfactions				For Grades			
	+	-	N	O	+	-	N	O	+	-	N	O
IHE	17	11	16	1		6	4	1	6			
W	14	14	14	1	8		5			6		
SI	17	25	8			6	4		2		1	
PS	23	17	8		7		4			2	1	
Total	71	67	46	2	15	12	17	1	8	8	2	0

	For Objectives	For Satisfactions	For Grades
No. of Patterns	186 (70%)	45 (63%)	18 (75%)
Nonpatterns	78	27	6
Total	264	72	24

TABLE XII-11

MISSISSIPPI: ALL TOTALLY CONSISTENT PATTERNS BETWEEN ENVIRONMENT AND ATTAINMENT AND BETWEEN PERSONALITY AND ATTAINMENT, GROUPED UNDER PERSONALITY VARIABLES

	Refl				Welf				Detr				Domn				Defc				Exhb			
	H	W	S	P	H	W	S	P	H	W	S	P	H	W	S	P	H	W	S	P	H	W	S	P
OBJ 1			-	+			-	+	N	N					-	+	N		-	+		N	-	+
2			+	-	N	+	+	-			+	-			+	-	N		+	-	0	+	+	-
3	+		+	-	+	-	+	-	+				+		+	-	+	-	+	-	+		+	-
4	N	N	N	N	N				N	-	-	+	+	-	-	+			-	+	N	N	-	+
5	-	+	-	+	N	N			-	+	-	+	-	+	-	+	-	+	-	+				
6					N	N	N	N	N	N	N	N			N	N					N	N	N	N
7	-	+	-	+		+	N	N	-	+	-	+	-	+	-	+	-	+	-	+	-	+		
8	N	N							N	N	N	N		N				N				0		
9	-	+	-	+	-	+	-		N	N					-	+			-	+			-	+
10	N	N	N	N	+	-	-						+	-			+	-	-	+	+	-	-	+
11	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-
SAT 1	-	+								+	-	+	-	+	-	+		+	-	+	N	N		
2	0				N	N	N	N														N	N	N
3	-	+	-	+	N	N	N	N	-	+		+	-	+	-	+	-	+	-	+	N	N	N	N
GRADES	+	-			+	-	+	-	+	-	N	N	+	-			+	-	+	-	+	-		

SUMMARY OF PATTERNS:

	For Objectives				For Satisfactions				For Grades			
	+	-	N	O	+	-	N	O	+	-	N	O
Refl	12	11	10		3	3		1	1	1		
Welf	10	10	10				8		2	2		
Detr	9	9	13		4	2			1	1	2	
Domn	14	13	3		4	4			1	1		
Defc	14	14	3		4	3			2	2		
Exhb	12	10	7	2			9		1	1		
Total	71	67	46	2	15	12	17	1	8	8	2	0

CHAPTER XIII

FLORIDA

The University of Florida and San Jose State College, which is described in the next chapter, are the two largest institutions included in the present study--both having enrollments of more than 12,000 students.

At Florida, the CCA replies were sorted into seven subgroups. Four of these were professional schools--Business Administration, Education, Nursing, and Journalism. Three were subgroups within Liberal Arts--Natural Sciences, Social Science, and Language Arts.

Environmental Scores

All four of the large publicly supported schools in the present study had IHE total scores lower than those of the more selective private institutions. This, of course, is related to admission policies, for Eastern Washington, Mississippi, Florida, and San Jose are open to a broader range of high school graduates than are Bennington, Antioch, Swarthmore, De Pauw, and St. Olaf. The Florida profile on the CCA shows that its highest score is on the PS dimension. Relative to the average for the nine schools, Florida is about at the middle on the SI dimension, and somewhat below the middle on the W and IHE dimensions. CCA means, standard deviations, and differences between subgroups and the composite at Florida are shown in Tables XIII-1, XIII-2, and XIII-3, respectively. Typically, the largest standard deviations are found on the student subscales of the various CCA dimensions. On these 15-item scales, two thirds of the scores generally fall within a range of five to six points. On the administrative and academic subscales, two thirds of the scores generally fall within a range of four to five points.

In Table XIII-3, the number of instances in which any subgroup score differs significantly from the college composite is 24. Since there are 112 comparisons in the table, the number which one might expect to differ significantly by chance is about five. The location of these significant differences reveals that the largest number are between the Nursing subgroup and the college composite. Neither Language Arts nor Journalism differs significantly from the college as a whole on any of the CCA scales, and the Social Science group differs from the college composite on only one of the CCA scales.

The actual magnitude of raw score differences between subgroups is, in most instances, quite small. No subgroup mean differs from any other subgroup mean by as much as three points on any of the subscales in the IHE, SI, and PS dimensions. On the W, or friendly, group welfare dimension, Nursing, Journalism, and Education are each more than three points higher than Natural Sciences on the academic subscale; and Nursing is also more than three points higher than Language Arts on this subscale. With respect to the total scores, or 45-item scales, there are no differences as large as five points between any two subgroups on the IHE, SI, and PS dimensions. On the W dimension, the Nursing subgroup again stands out, being more than five points higher than all other subgroups except Education. And Education is more than five points higher than Natural Sciences.

In general, then, the Florida data indicate that there are several deviant subcultures. Nursing, for example, differs significantly from the college as a whole on all four of the CCA dimensions; Business Administration differs on three of the four dimensions; Natural Sciences and Education each differ on two of the dimensions; and Social Sciences differ on one.

Attainment Scores

Ratings of progress toward objectives are shown in Table XIII-4. On four of the objectives, numbers 1, 4, 6, and 9, there are no significant differences between the progress ratings of subgroups and the college as a whole. These objectives are concerned with acquiring a broad cultural education, understanding different philosophies, personal development, and effective communication.

The Natural Sciences subgroup has significantly high progress ratings toward Objectives 3 and 11 (preparation for further scholarly work, and understanding science and technology) and significantly lower than average ratings on Objectives 5 and 7 (social development and citizenship). Language Arts is also lower than average in its ratings on Objectives 5 and 7. Nursing expresses a significantly higher than average rating of progress toward Objective 2 (job preparation) and Objective 5 (social development); but a lower than average rating of progress toward Objective 8 (critical thinking). All other subgroups, except Education, differ significantly from the college composite on at least one of the objectives.

In respect to the ratings of satisfactions with college life, the third item, which is concerned with finding a congenial group of friends, showed significantly higher satisfaction for the Nursing subgroup and significantly lower than average satisfaction for the Natural Sciences subgroup. These groups were also significantly high and low respectively in their scores on the friendly, group welfare press attributed to the environment. The Business subgroup had a significantly high score on one of the satisfaction items; and the Journalism subgroup reported making grades that were significantly lower than the average reported by the total group of students.

The rank order of progress toward objectives, in Table XIII-5, lists personal and social development, critical thinking, and background for further scholarly work as the top four in the college as a whole. The Natural Sciences subgroup expresses the greatest sense of progress toward understanding science and technology (Objective 11), but this ranks at or near the bottom of the list in all other subgroups. The Language Arts group rates its progress high on Objective 10 (appreciation of the arts). The Nursing group is the only one which gives a high ranking to Objective 2 (vocational training).

Relationships Between Environment and Attainment

Significant relationships between CCA scores and relevant objectives are shown in Table XIII-6. Of the 15 sets of relationships in the table, the number of consistent parallels is twice as many as the number of inconsistent ones. In Table XIII-7, which reports only whether each group was above or below the college composite in its perception of the press and its estimation of progress toward the attainment of relevant objectives, there are again twice as many consistent parallels as inconsistent ones. When the environment scores are significantly different from the average, one presumably would expect to find attainment ratings consistent with the press more frequently than when the scores that are merely above or below average are also considered, but the Florida data do not fall in line with this expectation. It will be recalled that most of the significant differences in perceived environmental press between subgroups were in relation to the friendly, group welfare scales. Significant deviations on this press dimension were always followed by significant or consistent progress ratings on one or both of the relevant objectives.

One observation that can be made from Table XIII-7 is that the relationship between press and progress on the IHE variable and relevant objectives is inconsistent about as often as it is consistent. A possible reason for this is that the ratings of estimated progress toward IHE related objectives are, with the exception of one subgroup on one objective, not significantly different from the average of the college as a whole.

Relationships Between Administrative, Academic, and Student Subscores

CCA scores, based on the consensus method of scoring, are shown in Table XIII-8, together with a comparison between Florida and the composite of the nine colleges. The most obvious fact about the scores is that, on the IHE scale, only one item from the student subscale contributes to the total score. Typically in the nine colleges, the administrative and academic subscores are about two points higher than the student subscore, but at Florida they are four and five points higher. One might speculate that Florida, like Eastern Washington, Mississippi, and San Jose, does not yet have a set of student subcultures which are in balance with the emphasis on intellectual, humanistic, esthetic directions coming from the administrative and academic features of the environment.

On the other dimensions, the relative contributions to the total scores from each of the three sources of press are fairly similar to what is typical for the composite of the nine colleges. A minor difference at Florida is the somewhat greater practical, status-oriented characteristic of the student subculture as compared with the academic subculture.

Personality Scores

Mean scores on the six scales of the Allport-Vernon-Lindzey Study of Values are shown in Table XIII-9. On these personality measures the Nursing subgroup is clearly the most deviant. It is significantly above the college average in Esthetic, Social, and Religious values; and significantly below the college average in Theoretical, Economic, and Political values. The Business Administration group differs significantly from the college composite on four of the scales--high on Economic and Political values, low on Esthetic and Social values. The Natural Sciences group is significantly high on Theoretical values. Both the Social Science and the Education groups are high on Social values. Language Arts is high on Esthetic values. Journalism does not differ significantly from the college composite on any of the scales.

High school grade-point averages were also obtained for most of the Florida students; and for some other students the ACE or SCAT scores were available, but these data are not shown in the table. There is no way of telling whether the aptitude scores are representative of the subgroup, since the number of cases taking one test or the other is substantially smaller than the total in the subgroup. In grade-point averages from high school, the Journalism subgoup was significantly lower than the college average, but none of the other groups differed from the college composite.

When the A-V-L scores are related to the appropriate objectives, as in the "sign test" type of comparison previously reported, the following relationships between personality, or values, and the attainment of relevant goals are obtained:

Fully consistent	22	27
Mainly consistent	5	
Neutral	4	
Mainly inconsistent	4	18
Fully inconsistent	14	
	49	

It will be recalled, from the chapter on Eastern Washington in which the A-V-L was also used, that the Theoretical and Esthetic scales were classified as relevant to the IHE press and to Objectives 1, 4, and 10; the Social and Religious scales were classified as relevant to the W press and to Objectives 5 and 7; the Theoretical scale was classified as relevant to the SI press and to Objectives 3, 8, and 11; and the Economic and

Political scales were related to the PS press and Objective 2. Since the Theoretical scale is used twice, making seven A-V-L scales, and since there are seven subgroups in the Florida study, the number of relationships between A-V-L scales and relevant objectives is 7 x 7, or 49.

Patterns of Influence

By analyzing the personality and press data together, so as to see their relationship to the attainment ratings when these two factors are congruent or different, one gets the following results:

When Environment and Personality are congruent, the relationships to Attainment ratings of relevant objectives are:

Fully consistent	16	22
Mainly consistent	6	
Neutral	3	
Mainly inconsistent	1	9
Fully inconsistent	8	

But, when Environment and Personality are different, the relationships to Attainment ratings of relevant objectives are:

Fully consistent with Environment	6	7
Mainly consistent with Environment	1	
Neutral	3	
Mainly consistent with Personality	1	5
Fully consistent with Personality	4	
	49	

In most of the subgroups the personality and press scores are congruent, 34 out of 49, and when this is the case the attainment of relevant objectives is consistent rather than inconsistent in a ratio of a little more than 2 to 1. When the variables differ, the environment factor is related to the attainment ratings in seven cases, compared with five cases on the side of the personality factor.

Looking at these interactions for the college as a whole instead of cumulatively by subgroups, the following patterns are obtained:

Environment	Personality	Relevant Objectives		
IHE	Theor	1	4	10
+	+	+	+	+
+	-	+	+	+
-	+	-	-	-
-	-	-	+	-

Environment	Personality	Relevant Objectives		
W	Esth	1	4	10
+	+	+	+	+
+	-	-	-	-
-	+	-	+	+
-	-	-	-	-
W	Soc	5	7	
+	+	+	+	
+	-	+	+	
-	+	+	+	
-	-	-	-	
W	Relig	5	7	
+	+	+	+	
+	-	+	+	
-	+	-	-	
-	-	-	-	
SI	Theor	3	8	11
+	+	+	+	+
+	-	-	-	-
-	+	-	+	+
-	-	+	-	-
PS	Econ	2		
+	+	-		
+	-	-		
-	+	+		
-	-	+		
PS	Polit	2		
+	+	-		
+	-	+		
-	+	-		
-	-	+		

When the IHE press and Theoretical values of the students are not congruent, the association with attainment of relevant objectives is always consistent with the environmental emphasis; but in relation to Esthetic values the relationship is primarily consistent with the values rather than the environmental emphasis. The attainment of Objectives 5 and 7 is always consistent with the Friendly, Group Welfare press, regardless of students' scores on the Social and Religious values scales.

The attainment of Objectives 3, 8, and 11 is more often congruent with the Theoretical values of students than with the SI press of the environment. Where the Practical, Status-oriented emphasis of the environment is congruent with either Economic or Political values, the attainment of Objective 2 is inconsistent.

The sum of all these patterns of relationships makes the following pattern for the college as a whole:

		Relevant Attainment		
Environment	Personality	+	-	o
+	+	13	2	
+	-	8	7	
-	+	5	10	
-	-	4	11	

In all cases in which environment and personality are opposed in their presumed influence, there are 18 instances in which attainment ratings are consistent with the environmental emphasis and 12 in which the attainment ratings are consistent with the personality emphasis.

Turning next to the analysis of all totally consistent patterns of relationship involving environmental press measures and personality measures on the one hand with all criterion measures on the other hand, one finds the results summarized in Tables XIII-10 and XIII-11. The rationale and meaning of these analyses have been discussed in previous chapters and are described fully in the Technical Note in the Appendix. No further explanation will be given at this point.

In the first of the two tables, where the data are grouped under the major environmental press categories, several observations may be made about the results. Progress toward Objective 2 is always totally consistent with the IHE and W press of the environment, regardless of students' scores on any of the A-V-L scales; and it is almost always totally consistent with the opposite of SI and PS press. Progress toward Objective 5 is also almost always totally consistent with the IHE and W press of the environment, regardless of student characteristics. Similar major patterns of consistency are readily identified by the enclosed segments of the table. Mean scores on the third satisfactions item are typically consistent with an IHE or a W press pattern of influence; but grades are typically consistent with the complete opposite of an IHE or a W press pattern.

In the second of the two tables, the relevance of the several personality measures is highlighted. Esthetic scores on the A-V-L, for example, are consistently related to the attainment of Objectives 4, 6, and 10, regardless of the environmental press. One unusual item in the table is the number of times a consistent anti-personality pattern appears. In the total matrix, as the summary of each table indicates, there are about the same number of anti-press patterns as press patterns, and about the same number of anti-personality patterns as personality patterns. Since the total number of consistent patterns of all types which one would expect to find by chance in the complete matrix is 29 percent, and the expected number for any one type is a little over 7 percent, it may be said that there is substantially more pattern than nonpattern in the matrix for objectives, for satisfactions, and for grades.

When a count of the number of totally consistent patterns is limited to those combinations of environment, personality, and attainment variables judged to be relevant to one another, the following numbers and locations of consistent patterns are obtained:

Patterns

Environment	+	-	N	O	Relevant Objectives
IHE	3		2	4	1, 4, 10
W	8		1		5, 7
SI	8		2		3, 8, 11
PS		5		1	2
	19	5	5	5	

Patterns

Personality	+	-	N	O	Relevant Objectives
Esthetic			7		1, 4, 10
Theoretical	4			1	1, 4, 10
Social	3	2			5, 7
Religious	5	2			5, 7
Theoretical			4		3, 8, 11
Economic	2	2			2
Political	2	1		1	2
	16	7	11	2	

From these summaries one can say that the attainment of Objectives 1, 4, 10 is mainly influenced by Esthetic values and IHE press. Objectives 5, 7 are mainly influenced by the W press. Objectives 3, 8, 11 are mainly influenced by SI press, supplemented by Theoretical values. The vocational training objective is related to an anti-PS press. Over all, the patterns of influence from the press outnumber those from the personality variables.

Summary

Although there are many significant differences between the environmental press of subgroups and that of the college as a whole, the majority of them are concentrated in the Nursing and Business Administration groups; and among the four press dimensions the largest number of significant differences are in relation to the Friendly, Group Welfare aspect of the environment. Students' sense of satisfaction with life at the University is also predominantly related to this W press influence, and indeed also to an influence opposite to Theoretical values. Despite the fact that students' satisfaction with college life is related to an influence opposite to Scientific, Independent press, the SI press of the environment is clearly associated with the attainment of goals relevant to this emphasis, and is further supplemented by the Theoretical values of some students. There are, then, deviant subgroups at Florida, both in environmental press and in student characteristics. The amount of progress which students report in the attainment of relevant objectives, and the degree to which they express satisfaction with the University, are somewhat more strongly influenced by the environment they find themselves in than by their own personal characteristics.

TABLE XIII-1. FLORIDA: CCA MEAN SCORES FOR SUBGROUPS AND TOTAL UNIVERSITY

Scale	Subgroups							Total University	
	Natural Sciences (N=39)	Social Sciences (N=30)	Language Arts (N=17)	Bus. Admin. (N=36)	Education (N=38)	Nursing (N=36)	Journalism (N=9)	All Students (N=205)	Average of Subgroups
Intellectual Humanistic Esthetic									
Ad	7.82	7.67	7.18	7.56	8.29	8.83	6.89	7.92	7.75
Ac	8.13	9.30	8.88	7.19	9.29	9.19	8.33	8.61	8.62
St	6.49	5.70	6.47	6.42	8.18	7.94	6.44	6.93	6.81
Total	22.44	22.67	22.53	21.17	25.76	25.97	21.67	23.46	23.18
Friendly Group Welfare									
Ad	6.59	7.07	7.06	6.72	7.95	8.92	6.67	7.39	7.33
Ac	6.41	8.23	7.88	8.03	10.16	11.00	9.78	8.73	8.78
St	9.33	9.03	9.18	10.19	10.84	11.36	9.78	10.08	9.96
Total	22.43	24.33	24.12	24.94	28.95	31.28	26.22	26.20	26.07
Scientific Independent									
Ad	9.10	9.20	8.35	8.89	9.11	8.97	8.00	8.95	8.95
Ac	8.33	7.67	6.94	6.03	7.50	7.67	7.00	7.39	7.31
St	9.08	7.63	7.76	7.42	6.92	6.17	7.00	7.46	7.43
Total	26.51	24.50	23.06	22.33	23.53	22.81	22.00	23.80	23.69
Practical Status-oriented									
Ad	10.05	9.60	9.71	10.19	10.03	10.14	9.67	9.98	9.91
Ac	8.38	8.37	7.41	9.14	8.84	6.89	8.78	8.27	8.26
St	9.05	11.00	9.41	9.81	9.66	10.17	8.44	9.78	9.65
Total	27.49	28.97	26.53	29.14	28.53	27.19	26.89	28.03	27.82

TABLE XIII-2. FLORIDA: CCA STANDARD DEVIATIONS FOR SUBGROUPS AND TOTAL UNIVERSITY

Scale	SUBGROUPS							TOTAL UNIVERSITY	
	Natural Sciences	Social Sciences	Language Arts	Bus. Admin.	Education	Nursing	Journalism	All Students	Average of Subgroups
Intellectual Humanistic Esthetic									
Ad	2.15	2.44	2.55	2.40	2.29	2.29	1.59	2.37	2.24
Ac	2.72	2.64	2.76	2.21	2.50	1.82	2.87	2.58	2.50
St	2.38	3.05	3.20	3.48	3.47	2.58	2.99	3.17	3.02
Total	4.73	5.70	6.82	6.00	6.04	4.60	5.94	5.89	5.69
Friendly Group Welfare									
Ad	1.98	1.97	2.71	2.18	2.33	2.06	1.70	2.31	2.13
Ac	3.01	3.08	2.35	2.05	2.56	1.68	1.99	2.96	2.39
St	2.44	3.03	3.47	2.50	2.13	1.73	2.04	2.62	2.48
Total	5.44	6.57	6.61	5.13	5.37	3.50	4.49	6.20	5.30
Scientific Independent									
Ad	1.79	2.23	2.11	2.02	1.77	1.26	1.89	1.88	1.87
Ac	2.35	2.01	2.15	2.17	2.48	1.93	2.26	2.33	2.19
St	1.85	2.04	2.67	2.17	2.67	2.14	2.79	2.45	2.33
Total	3.39	3.51	4.89	3.96	4.69	3.02	5.42	4.23	4.13
Practical Status-oriented									
Ad	1.85	1.74	1.67	1.91	1.63	1.96	2.58	1.86	1.91
Ac	1.96	2.21	2.87	1.84	1.90	1.74	1.13	2.14	1.95
St	2.92	2.05	1.85	2.16	2.87	2.47	2.83	2.59	2.45
Total	3.80	4.48	5.00	4.26	4.35	4.03	4.72	4.37	4.38

TABLE XIII-3. FLORIDA: DIFFERENCES BETWEEN SUBGROUP MEANS AND COMPOSITE MEAN ON CCA SCALES

	Subgroups						
Scale	Natural Sciences (N=39)	Social Sciences (N=30)	Language Arts (N=17)	Bus. Admin. (N=36)	Education (N=38)	Nursing (N=36)	Journalism (N=9)
Intellectual Humanistic Esthetic							
Ad	- .10	- .25	- .74	- .36	.37	.91*	-1.03
Ac	- .48	.69	.27	-1.42**	.68	.58	- .28
St	- .44	-1.23	- .46	- .51	1.25*	1.01*	- .49
Total	-1.02	- .79	- .93	-2.29*	2.30*	2.51**	-1.79
Friendly Group Welfare							
Ad	- .80*	- .32	- .33	- .67	.56	1.53**	- .72
Ac	-2.32**	- .50	- .85	- .70	1.43**	2.27**	1.05
St	- .75	-1.05	- .90	.11	.76	1.28**	- .30
Total	-3.87**	-1.87	-2.08	-1.26	2.75**	5.08**	.02
Scientific Independent							
Ad	.15	.25	- .60	- .06	.16	.02	- .95
Ac	.94*	.28	- .45	-1.36**	.11	.28	- .39
St	1.62**	.17	.30	- .04	- .54	-1.29**	- .46
Total	2.71**	.70	- .74	-1.47	- .27	- .99	-1.80
Practical Status-oriented							
Ad	.07	- .38	- .27	.21	.05	.16	- .31
Ac	.11	.10	- .86	.87*	.57	-1.38**	.51
St	- .73	1.22**	- .37	- .03	- .12	.39	-1.34
Total	- .54	.94	-1.50	1.11	.50	- .84	-1.14

NOTE: * sign indicates $p < .05$; ** sign indicates $p < .01$

TABLE XIII-4

FLORIDA: DIFFERENCES BETWEEN SUBGROUP MEANS AND THE UNIVERSITY MEAN ON OBJECTIVES, SATISFACTIONS, AND GRADES

		OBJ	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ	OBJ	SAT	SAT	SAT	GRADES
	N	1	2	3	4	5	6	7	8	9	10	11	1	2	3	
University	208	2.32	2.36	2.22	2.33	1.87	1.70	2.29	2.12	2.25	2.29	2.36	1.77	1.85	1.89	3.77
Nat. Sci.	39	-.06	.00	.48**	-.13	-.31*	-.09	-.33*	.07	.02	.01	.87**	-.13	.13	-.34*	.13
Soc. Sci.	30	.19	-.94**	-.31*	.20	-.03	-.10	-.01	.05	-.22	.19	-.14	-.26	-.32	-.04	.20
Lang. Arts	19	.11	-.38	-.31	.07	-.45*	-.19	-.39*	-.20	-.12	.13	-.11	-.23	-.31	-.37	.09
Bus. Admin.	36	-.21	.11	.11	-.09	.12	.23	.29	.18	.06	-.40*	-.14	.13	.35*	.08	.13
Education	38	.19	.12	-.07	.15	.19	-.06	.18	.01	.14	.18	-.32	.09	-.15	.13	-.23
Nursing	38	-.13	.73**	.01	-.12	.29**	.09	-.03	-.27*	-.14	-.03	-.03	.22	.07	.31**	-.02
Journalism	9	-.01	-.08	-.44	.00	-.01	-.07	.41	.35	.37	-.04	-.75**	.10	-.15	.11	-.79*

NOTE: * sign indicates p <.05; ** sign indicates p <.01

In the top row of this table, a low score indicates a favorable rating.
In the rest of the table the minus (-) signs have their customary meaning of "less favorable."

TABLE XIII-5

FLORIDA: RANK ORDER OF ESTIMATED PROGRESS TOWARD OBJECTIVES

	Rank	Total	Natural Sciences	Social Sciences	Language Arts	Bus. Admin.	Education	Nursing	Journalism
Highest	1	6	11	6	6	6	5	5	5
	2	5	3	5	10	5	6	6	8
	3	8	6	8	1	8	7	2	5
	4	3	8	10	4	7	8	3	7
	5	9	5	1	5	3	9	9	9
	6	7	9	4	8	9	10	7	1
	7	10	10	7	9	2	1	10	4
	8	1	2	9	11	4	4	8	10
	9	4	1	11	3	11	2	11	2
	10	2	4	3	7	1	3	1	3
Lowest	11	11	7	2	2	10	11	4	11

NOTE: Bracketed numbers indicate tied ranks.

TABLE XIII-6. FLORIDA: ANALYSIS OF SIGNIFICANT RELATIONSHIPS BETWEEN ENVIRONMENT AND ATTAINMENT

IHE		W		SI		PS	
Press	Progress 1, 4, 10	Press	Progress 5, 7	Press	Progress 3, 8, 11	Press	Progress 2
B.A. (Ac) -	B.A. (10) -	N.S. (Ad) -	N.S. (5) -	N.S. (Ac) +	N.S. (3) +	S.S. (St) +	S.S. (2) -
B.A. (Tot.) -		N.S. (Ac) -	N.S. (7) -	N.S. (St) +	N.S. (11) +		
		N.S. (Tot.) -		N.S. (Tot.) +			
		Nurs (Ad) +	Nurs (5) +	Nurs (St) -	Nurs (8) -	Nurs (Ac) -	Nurs (2) +
		Nurs (Ac) +					
Educ (St) +	+	Nurs (St) +					
Educ (Tot.) +		Nurs (Tot.) +					
Nurs (Ad) +							
Nurs (St) +	+	Educ (Ac) +	+	B.A. (Ac) -	+	B.A. (Ac) +	+
Nurs (Tot.) +		Educ (Tot.) +					
		-	L.A. (5) -	-	Jour (11) -		
			L.A. (7) -	+	S.S. (3) -		

NOTE: B.A. = Business Administration; L.A. = Language Arts; N.S. = Natural Sciences; S.S. = Social Sciences

TABLE XIII-6 (concluded)

FLORIDA: SUMMARY OF RELATIONSHIPS

	No. of Examples	
Environment and Attainment both significant and consistent	5	10
Environment significant and Attainment consistent	3	
Attainment significant and Environment consistent	2	
Neutral	0	
Environment significant and Attainment inconsistent	2	5
Attainment significant and Environment inconsistent	1	
Environment and Attainment both significant but inconsistent	2	
	15	

TABLE XIII-7

FLORIDA: "SIGN TEST" ANALYSIS OF RELATIONSHIPS BETWEEN ENVIRONMENT AND ATTAINMENT

Subgroups	IHE		W		SI		PS	
	Press	Progress 1, 4, 10	Press	Progress 5, 7	Press	Progress 3, 8, 11	Press	Progress P 2
Natural Sciences	-	- - +	⊖	⊖⊖	⊕	⊕ + ⊕	-	o
Social Sciences	-	+ + +	-	- -	+	⊖ + -	⊕	⊖
Language Arts	-	+ + +	-	⊖⊖	-	- - -	-	-
Business Administration	⊖	- - ⊖	-	+ +	⊖	+ + -	+	+
Education	⊕	+ + +	⊕	+ +	-	- + -	+	+
Nursing	⊕	- - -	⊕	⊕ -	⊖	+ ⊖ -	⊖	⊕
Journalism	-	- o -	+	- +	-	- + ⊖	-	-

SUMMARY OF RELATIONSHIPS

Pattern	No. of Examples	
Fully consistent	12	17
Mainly consistent	5	
Neutral	3	
Mainly inconsistent	2	8
Fully inconsistent	6	
	28	

NOTE: ○ indicates a significant difference from the composite mean.

TABLE XIII-8

FLORIDA: DIFFERENCES BETWEEN ADMINISTRATIVE, ACADEMIC, AND STUDENT SUBSCORES (66%+ METHOD)

CCA Scores Based on 66%+ Consensus

	IHE	W	SI	PS
Ad	5	6	6	8
Ac	6	6	4	6
St	1	7	3	10
Total	12	19	13	24

Differences

		Florida	Composite of Nine Colleges
IHE	Ad vs. Ac	-1	.1
	Ad vs. St	4	2.2
	Ac vs. St	5	2.1
W	Ad vs. Ac	0	0
	Ad vs. St	-1	-1.3
	Ac vs. St	-1	-1.3
SI	Ad vs. Ac	2	- .2
	Ad vs. St	3	2.8
	Ac vs. St	1	3.0
PS	Ad vs. Ac	2	.3
	Ad vs. St	-2	-1.1
	Ac vs. St	-4	-1.4

NOTE: Minus (-) signs indicate that the first item of the pair is lower than the second.

TABLE XIII-9

FLORIDA: MEAN SCORES OF SUBGROUPS AND THE TOTAL UNIVERSITY ON THE ALLPORT-VERNON-LINDZEY STUDY OF VALUES

	N	Theoretical	Economic	Esthetic	Social	Political	Religious
Total University	200	42.60	40.01	39.05	37.77	41.26	39.40
Natural Sciences	39	48.92**	41.24	36.68	34.76	40.47	38.00
Social Sciences	30	42.07	37.17	40.17	39.37**	44.00	36.70
Language Arts	19	41.33	37.06	47.28**	35.56	40.39	38.56
Business Administration	36	41.76	46.71**	33.94**	35.15*	45.44**	37.03
Education	38	40.97	37.55	39.63	40.37*	39.08	42.50
Nursing	38	39.66**	35.63**	42.03*	42.13**	37.42**	43.16*
Journalism	9	41.00	47.22	34.78	36.67	45.67	34.67

NOTE: * sign indicates p .05; ** sign indicates p .01

TABLE XIII-10

FLORIDA: ALL TOTALLY CONSISTENT PATTERNS BETWEEN ENVIRONMENT AND ATTAINMENT AND BETWEEN PERSONALITY AND ATTAINMENT, GROUPED UNDER ENVIRONMENTAL VARIABLES

	IHE						W						SI						PS					
	T	E	A	S	P	R	T	E	A	S	P	R	T	E	A	S	P	R	T	E	A	S	P	R
OBJ 1	+	0			0		+	0			0												0	
2	+	+	+	+	+	+	+	+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	0	-
3					N	0				-	-									-	-			
4			N			0			N			0		0	N			0	+			+		
5		+	+	+	+	+	N	+	+	+	+	+	0		-	-	-	-			+		+	
6	0		N	N	0	N	0		N	N	0	N		-	N				0		N			
7						+		+		+		+		-	-	-	-	-	+	+	+		+	+
8		-	-	-		-		-				-	N	+		+		+	N			+		
9		+				+		+	+		+	+		-	-		-	-				N		
10	+	0	N			+		0	N	N	0	+		0	N	N	0		0	0	N	N	0	N
11		-	-	-	-	-		-	-	-	-	-	N	+	+	+	+	+	N	-	-	-	-	-
SAT 1		+	+	-		+		+	+			+	0	-	-			-	0		+	N	0	N
2	0	N	N				0	N	N			0	0	N				0	0			N		
3		+	+	+	+	+		+	+	+	+	+	0	-	-		-	-	0		+		+	+
GRADES	-			-	-	-	-		-	-		-			+			+	0		N		0	

Key to Symbols:

+ = totally consistent with press
- = totally anti-press
N = totally consistent with personality
0 = totally anti-personality
blank = all other patterns

T = Theoretical
E = Economic
A = Esthetic
S = Social
P = Political
R = Religious

TABLE XIII-10 (concluded)

SUMMARY OF PATTERNS:

	For Objectives				For Satisfactions				For Grades			
	+	-	N	0	+	-	N	0	+	-	N	0
IDE	17	9	6	7	8	1	2	1		4		
W	20	9	7	7	8		2	2		4		
SI	8	20	6	5		7	1	4	2			
PS	10	12	7	6	4		3	4			1	2
Total	55	50	26	25	20	8	8	11	2	8	1	2

No. of	For Objectives	For Satisfactions	For Grades
Patterns	156 (59%)	47 (65%)	13 (54%)
Nonpatterns	108	25	11
Total	264	72	24

TABLE XIII-11

FLORIDA: ALL TOTALLY CONSISTENT PATTERNS BETWEEN ENVIRONMENT AND ATTAINMENT AND BETWEEN PERSONALITY AND ATTAINMENT, GROUPED UNDER PERSONALITY VARIABLES

	Theoretical				Economic				Esthetic				Social				Political				Religious			
	E	W	S	P	E	W	S	P	E	W	S	P	E	W	S	P	E	W	S	P	E	W	S	P
OBJ 1	+	+			0	0											0	0		0				
2	+	+	-	-	+	+	0	0	+	+	-	-	+	+	-	-	+	+	-	0	+	+	-	-
3								-				-		-			N	-			0			
4				+			0		N	N	N					+					0	0	0	
5		N	0		+	+			+	+	-	+	+	+	-		+	+	-	+	+	+	-	
6	0	0		0			-		N	N	N	N	N	N			0	0			N	N		
7				+		+	-	+			-	+		+	-				-	+	+	+	-	+
8			N	N	-	-	+		-				-		+	+					-	-	+	
9					+	+	-			+	-					N		+	-		+	+	-	
10	+			0	0	0	0	0	N	N	N	N		N	N	N		0	0	0	+	+		N
11			N	N	-	-	+	-	-	-	+	-	-	-	+	-	-	-	+	-	-	-	+	-
SAT 1			0	0	+	+	-		+	+	-	+	-			N				0	+	+	-	N
2	0	0	0	0	N	N	N		N	N						N						0	0	
3			0	0	+	+	-		+	+	-	+	+	+			+	+	-	+	+	+	-	+
GRADES	-	-		0						-	+	N	-	-			-			0	-	-	+	

SUMMARY OF PATTERNS:

For Objectives

	+	-	N	0
Theor	7	2	5	5
Econ	10	11		7
Esth	8	10	11	
Soc	9	9	6	
Polit	8	8	1	9
Relig	13	10	3	4
	55	50	26	25

For Satisfactions

	+	-	N	0
Theor				8
Econ	4	2	3	
Esth	6	2	2	
Soc	2	1	2	
Polit	3	1		1
Relig	5	2	1	2
	20	8	8	11

For Grades

	+	-	N	0
Theor		2		1
Econ				
Esth	1	1	1	
Soc		2		
Polit		1		1
Relig	1	2		
	2	8	1	2

CHAPTER XIV

SAN JOSE

San Jose is the oldest of the California State Colleges, becoming a State institution in 1862. In 1935 the existing State Teachers Colleges --San Diego, San Jose, San Francisco, Fresno, and Chico--were authorized to develop general liberal arts curricula and were rechristened State Colleges. Since that time six other State Colleges have been established --Long Beach, Los Angeles, Sacramento, San Fernando, Sonoma, Stanislaus.

In California the State Colleges draw their students typically from the upper third of the high school graduates, and in this respect are as selective as many state universities in other parts of the country. They do not, however, offer instruction beyond the master's degree.

Environmental Scores

In relation to the nine colleges in the study, San Jose's total scores on each of the four CCA scales place it at or near the middle position. It ranks one place above the middle on the SI and PS scales, at the middle on the W scale, and one place below the middle on the IHE scale. Mean scores for each of the subgroups and the total college are shown in Table XIV-1, with the corresponding standard deviations in Table XIV-2. The San Jose profile is a relatively flat one--that is, there are no very high or very low scores on any of the scales.

Eleven subgroups have been analyzed at San Jose. Six of these are within liberal arts--English, Psychology, Social Sciences, Math-Physics, Biological Sciences, and Other Sciences. Four represent professional or vocational programs--Art, Business Administration, Engineering, and Education. Education is split into two groups--Elementary Education majors and Education students who have academic majors. The degree to which these subgroups differ from the college composite is shown in Table XIV-3.

Among the subgroups, English, Social Sciences, Biological Sciences, Math-Physics, and Education (Academic) do not differ significantly from the college composite on any of the CCA scales. Moreover, none of the eleven subgroups differs significantly from the college composite on any of the IHE scales.

On the W scale, administrative subscore, Psychology is significantly lower than the college average. On the SI dimensions, Psychology, Other Sciences, and Engineering are significantly higher than the college composite on one or more scores, and Business Administration and Art are significantly lower. On the PS dimension, Psychology has some scores significantly lower and Elementary Education has some scores significantly higher than the college average.

The location of these significant differences, as between the administrative, academic, and student subscales of the CCA is also of some interest. There is only one significant difference between any subgroup and the composite on the administrative scales; there are three on the academic scales and five on the student subscales; and there are five which involve the total scores. The number of significant differences shown in the table, 14 in all, is not much greater than one might expect to find by chance in a total of 176 comparisons.

The number of instances in which any subgroup mean differs by as much as three points from the mean of any other subgroup, on the various 15-item scales, is also very small. On the SI academic subscale, the mean score of English majors is more than three points lower than the mean score of Psychology and Art majors. Considering only the total scores, or 45-item scales, there are two instances in which the mean of a subgroup differs by five points or more from the mean of another subgroup. On the W scale, the Biological Sciences group is more than five points higher than the Other Sciences group. And on the PS scale, the Elementary Education group is more than five points higher than the Psychology group.

Attainment Scores

Table XIV-4 shows the differences between subgroups and the composite in ratings of progress toward the attainment of objectives. With eleven subgroups each rating progress toward eleven objectives, making a total of 121 ratings, there are 37 significant ones, or 31 percent of the total. It is clear that the San Jose subgroups are much more differentiated from one another in their estimated progress toward various educational goals than they are in their perceived environmental press.

Every subgroup differs significantly from the college composite in its estimated attainment of at least one of the eleven objectives. The greatest differentiation between subgroups is in respect to Objective 11 (understanding science and technology). Significantly higher than average achievement is reported by the Engineering, Math-Physics, Biological Sciences, and Other Sciences subgroups; and significantly lower than average by English, Social Studies, Elementary Education, Business, and Art. The most deviant subgroup is Engineering, differing significantly from the college composite in its reported attainment of eight of the eleven objectives. The least deviant subgroup is Education (Academic), differing significantly from the college composite in its reported attainment of only one of the eleven objectives.

For the college as a whole, personal development, critical thinking, and social development are the goals toward which greatest progress is reported. The rank ordering of objectives, within each of the subgroups as well as for the total college, is shown in Table XIV-5. Large differences in rank order are apparent. Objectives which rank among the top four in some groups are ranked among the lowest four in other groups. Except for Objective 6 (personal development) which ranks consistently high, and for Objective 1 (broad cultural education) which ranks consistently near the middle, there is no unanimity among the subgroups in the attainment ratings of progress toward the various objectives.

Relationships Between Environment and Attainment

When the significant deviations in CCA scores, from Table XIV-3, are put together with the significant deviations in attainment ratings of relevant objectives, from Table XIV-4, the resulting combinations show only five examples in which both press and progress are significant and consistent. Table XIV-6 presents these combinations. All five examples of what might be called the ideally expected fit are in relation to the scientific, independent dimensions. There are no examples of a reversal in the expected direction of relationship when both press and progress scores are significant. The over-all results are in the expected direction about twice as frequently as they are in the reverse direction.

In Table XIV-7, which records all scores as either above or below the college average, the consistent relationships are again about twice as many as the inconsistent ones.

Relationships Between Administrative, Academic, and Student Subscores

The CCA scores, determined by the 66%+ method, are shown in Table XIV-8, together with the differences between the three segments of the test. Compared with the composite of the nine schools, San Jose is fairly typical on the W and PS dimensions. On the IHE dimension, however, only one point in the total score comes from the student subscale. Items from the administrative subscale contribute most to the IHE press of the college, and proportionately more than is typical for the nine colleges. The same is true on the SI scale, where the items from the administrative subscale again account for the largest share of the total score. Apparently San Jose has facilities and policies and procedures which support a humanistic, esthetic and scientific, independent emphasis in somewhat fuller measure than the characteristics of its students, extracurricular programs, and informal student activities support such emphases.

Personality Scores

The San Jose students were given five scales from Gough's California Psychological Inventory. These were the scales entitled Responsibility, Sociability, Self-control, Achievement via Independence, and Intellectual Efficiency. Mean scores of the various subgroups and of the total college are shown in Table XIV-9. English and Psychology majors each had significantly higher than average scores on the scales measuring Achievement via

Independence and Intellectual Efficiency. Social Science majors had mean scores significantly higher than the college composite on the scales measuring Sociability, Self-control, and Achievement via Independence. Majors in sciences other than the Biological Sciences and Math-Physics had significantly higher than average scores on the Responsibility scale. Engineering students were higher than average on Self-control. Business students were significantly lower than average on the scales measuring Responsibility, Self-control, and Achievement via Independence. The other groups at San Jose, namely, Biological Sciences, Math-Physics, Education (Elementary), and Education (Academic), did not differ from the college as a whole on any of the five personality variables.

In order to study the relationships between these personality variables and the attainment of relevant objectives, one first needs to classify the personality tests in terms of their relevance to the four environmental press dimensions and their corresponding objectives. From an inspection of the test manual for the California Psychological Inventory and from judgments based on the content of items in the various scales, the following classifications were made. Achievement via Independence and Intellectual Efficiency are relevant both to the IHE and the SI press dimensions. Responsibility and Sociability were each considered relevant to the W press dimension. The Sociability scale was also considered relevant to the PS dimension. The Self-control scale could not be classified as exclusively or primarily related to any of the four environmental variables. Using these classifications in relation to the attainment of relevant objectives and noting whether students' mean attainment ratings of the relevant objectives are above or below the college average as in the "sign test" analysis in Table XIV-7, the following relationships between personality variables and attainment ratings were obtained:

Fully consistent	38	40
Mainly consistent	2	
Neutral	6	
Mainly inconsistent	12	31
Fully inconsistent	19	
	77	

The number of consistent versus inconsistent (40 versus 31) relationships here may be compared with the summary in Table XIV-7 which showed that there were 29 consistent as opposed to 12 inconsistent relationships between the environmental variables and relevant attainment.

Patterns of Influence

In the summary below both personality and environmental factors are considered together in their relationship to students' attainment of relevant goals.

When Environment and Personality are congruent, the relationships to Attainment ratings of relevant objectives are:

Fully consistent	27	27
Mainly consistent	0	
Neutral	2	
Mainly inconsistent	4	8
Fully inconsistent	4	

But, when Environment and Personality are different, the relationships to Attainment ratings of relevant objectives are:

Fully consistent with Environment	14	21
Mainly consistent with Environment	7	
Neutral	4	
Mainly consistent with Personality	2	15
Fully consistent with Personality	13	
	77	

In slightly more than half of the above examples the environment and personality scores are not congruent. When this is true the relationships to attainment are consistent within the environmental emphasis in 21 instances and consistent with the personality emphasis in 15 cases.

In the foregoing analysis the relationships of environment and personality with attainment were considered separately for each subgroup within the college. In the next analysis the patterns of relationship for the college as a whole are considered. This procedure has been described in previous chapters. These total college relationships for each combination of environmental and personality measures are as follows:

Environment	Personality	Relevant Objectives		
IHE	Ai	1	4	10
+	+	+	+	+
+	-	-	-	+
-	+	+	-	-
-	-	-	-	-

Environment	Personality	Relevant Objectives		
IHE	Ie	1	4	10
+	+	+	+	+
+	-	-	+	+
-	+	+	-	-
-	-	-	-	-
W	Resp	5	7	
+	+	+	+	
+	-	+	-	
-	+	-	+	
-	-	-	-	
W	Sy	5	7	
+	+	+	+	
+	-	-	-	
-	+	+	+	
-	-	-	-	
SI	Ai	3	8	11
+	+	+	+	+
+	-	+	-	+
-	+	-	+	-
-	-	-	-	-
SI	Ie	3	8	11
+	+	+	+	+
+	-	+	-	+
-	+	-	+	-
-	-	-	-	-
PS	Sy	2		
+	+	+		
+	-	+		
-	+	-		
-	-	-		

When there is a conflict (that is, one variable being above average and the other being below average) between the measurements of Achievement via Independence and Intellectual Efficiency on the one hand with IHE press or SI press on the other hand, the attainment of relevant objectives is in line with the environmental variables rather than the personality variables in most instances. The Sociability scale, rather than the W press, is the influential factor in the attainment of Objectives 5 and 7; but the influence of this variable is subordinate to the PS press in relation to the attainment of Objective 2.

The sum of these relationships produces the following distribution:

Environment	Personality	Relevant Attainment +	-	o
+	+	17		
+	-	9	8	
-	+	7	10	
-	-		17	

Congruence between the environment and personality measures is always followed by attainment ratings that are consistent. When there is a discrepancy between the two measures, the attainment ratings are consistent with the environment in 19 cases and consistent with the personality measures in 15 cases.

Tables XIV-10 and XIV-11 record all the totally consistent patterns of relationship between the environmental, personality, and criterion variables. The technical explanation of these tables is given in the Appendix. In relation to the objectives, Table XIV-10 shows a larger number of consistent anti-press patterns than consistent press patterns. For Table XIV-11, one can see that none of the personality patterns, except those involving the Sociability scale, are as numerous as either the press or anti-press patterns in relation to the attainment of objectives. Clearly, however, satisfaction with the college is primarily related to students' personality characteristics, and especially to the characteristic of Intellectual Efficiency.

By selecting from these larger tables only those combinations of environmental or personality variables judged to be relevant to the attainment of certain objectives, one gets the following results:

Environment	Patterns +	-	N	0	Relevant Objectives
IHE	9		2		1, 4, 10
W	4		3		5, 7
SI	10		3		3, 8, 11
PS	5				2
	28	0	8	0	

Personality	Patterns +	-	N	0	Relevant Objectives
Ach. Ind.	2	3	3		1, 4, 10
Int. Eff.	3	3	3		1, 4, 10
Resp.	2		4	1	5, 7
Sociab.			7		5, 7
Ach. Ind.	3	6	2		3, 8, 11
Int. Eff.	2	7	2		3, 8, 11
Sociab.	1	1			2
	13	20	21	1	

The attainment of all objectives, except numbers 5 and 7, are seen in the first summary to be related primarily to consistent press influences, regardless of students' characteristics. In the second summary one sees that the attainment ratings on Objectives 5 and 7 are primarily related to consistent influences of the Responsibility and Sociability variables, regardless of environmental press. When the other personality measures are associated with objectives relevant to them, the direction of influence is primarily the opposite to the press of the environment.

Summary

San Jose, despite its size and complexity, has relatively few subgroups in which the environment is perceived differently from the general atmosphere of the college. The environment of Engineering majors appears to differ most from the other groups. Even though there are relatively few deviant environments, there are many differences between groups of academic majors in their rated progress toward the attainment of objectives. These differences in attainment are more often related to environmental press variables than to the personality characteristics of students in the various environments. The variable of Sociability is clearly related to those objectives concerned with social development and effective citizenship; but except for this, none of the other personality measures appears to make any large contribution to the attainment of goals relevant to them. Satisfaction with college life, however, is seldom related to environment press and is, rather, most consistently influenced by students' characteristics, especially those of Sociability and Intellectual Efficiency. There do not seem to be any highly visible student subcultures whose members share intellectual dispositions or other characteristics that lend strong support to a corresponding intellectual press in the environment. The intellectual press of the environment comes primarily from administrative and academic sources, and relatively little from student sources. This may well be a condition which applies to many commuter colleges.

TABLE XIV-1. SAN JOSE: CCA MEAN SCORES FOR SUBGROUPS AND TOTAL COLLEGE

Scale	Subgroups											Total College	
	Engl. (N=17)	Psych. (N=35)	Soc. Sci. (N=16)	Other Sci. (N-12)	Biol. Sci. (N=22)	Math-Phys. (N=18)	Elem. Educ. (N=15)	Acad. Educ. (N=11)	Engr. (N=84)	Bus. Adminis. (N=59)	Art (N=17)	All Students (N=306)	Average of Subgroups
Intellectual Humanistic Esthetic													
Ad	8.18	9.00	8.69	9.17	9.59	9.22	8.53	10.55	9.85	9.41	9.29	9.36	9.22
Ac	9.06	8.49	7.31	8.00	9.68	8.67	7.27	9.27	8.20	7.51	8.82	8.25	8.39
St	7.12	7.51	7.63	6.58	8.23	7.61	8.13	8.09	7.40	6.78	8.18	7.43	7.57
Total	24.35	25.00	23.63	23.75	27.50	25.50	23.93	27.91	25.45	23.69	26.29	25.04	25.18
Friendly Group Welfare													
Ad	7.65	6.74	8.13	7.00	8.69	7.56	8.27	7.82	8.02	7.64	7.94	7.77	7.77
Ac	8.06	9.06	9.13	7.75	9.59	7.94	9.73	8.91	8.18	8.83	9.00	8.67	8.74
St	10.41	9.69	10.25	9.33	11.18	9.33	10.93	10.73	10.55	10.31	10.47	10.33	10.29
Total	26.12	25.49	27.50	24.08	29.45	24.83	28.93	27.45	26.75	26.78	27.41	26.76	26.80
Scientific Independent													
Ad	9.88	9.77	10.50	9.67	10.05	9.67	9.47	10.27	9.90	9.73	9.00	9.81	9.81
Ac	5.24	8.97	7.63	8.00	8.05	6.56	6.93	6.09	7.75	6.63	8.29	7.42	7.29
St	7.00	7.11	7.06	8.92	7.27	8.00	6.33	6.91	8.08	6.53	5.88	7.28	7.19
Total	22.12	25.86	25.19	26.58	25.36	24.22	22.73	23.27	25.74	22.88	23.18	24.51	24.29
Practical Status-oriented													
Ad	8.71	8.86	9.19	8.92	9.27	8.11	9.73	9.09	8.85	8.98	9.59	8.97	9.03
Ac	7.53	7.66	9.19	9.50	9.18	8.67	9.80	8.27	9.10	9.34	8.24	8.85	8.77
St	9.00	8.09	8.69	7.67	9.05	8.39	10.20	9.82	8.88	9.46	10.06	9.00	9.03
Total	25.24	24.60	27.06	26.08	27.50	24.17	29.73	27.18	26.82	27.78	27.88	26.81	26.83

TABLE XIV-2. SAN JOSE: CCA STANDARD DEVIATIONS FOR SUBGROUPS AND TOTAL COLLEGE

Scale	Subgroups											Total College	
	Engl.	Psych.	Soc. Sci.	Other Sci.	Biol. Sci.	Math-Phys.	Elem. Educ.	Acad. Educ.	Engr.	Bus. Admin.	Art	All Students	Average of Subgroups
Intellectual Humanistic Esthetic													
Ad	2.38	2.23	1.65	2.61	2.25	1.75	1.45	2.23	2.05	2.20	2.05	2.17	2.08
Ac	2.60	2.92	2.80	3.24	1.84	2.83	3.09	1.96	2.86	2.60	2.87	2.82	2.69
St	3.83	3.38	1.54	3.25	3.69	2.63	3.10	3.26	3.07	3.00	3.11	3.26	3.08
Total	7.08	6.99	5.00	7.51	6.32	5.06	6.04	6.50	6.45	6.41	6.05	6.51	6.31
Friendly Group Welfare													
Ad	2.17	2.31	2.47	2.20	1.96	2.14	2.17	2.08	2.42	2.22	2.51	2.34	2.24
Ac	2.18	2.90	2.09	3.24	2.84	2.15	2.62	1.88	2.65	3.15	2.79	2.79	2.59
St	2.99	2.42	2.02	3.57	3.05	2.91	2.11	2.49	2.68	2.59	2.85	2.73	2.70
Total	6.09	6.14	4.74	6.16	6.00	5.37	5.85	4.98	6.34	6.27	6.54	6.20	5.86
Scientific Independent													
Ad	1.64	1.76	2.09	1.55	2.10	2.40	2.19	.86	1.77	1.61	1.61	1.83	1.78
Ac	1.99	2.13	2.32	2.55	1.92	2.45	1.61	2.19	2.40	2.53	1.74	2.46	2.17
St	1.57	2.15	1.98	2.43	2.88	1.97	2.44	1.78	2.11	2.29	2.11	2.33	2.16
Total	3.03	3.51	4.54	3.88	4.56	5.30	4.43	3.93	4.28	4.30	4.22	4.46	4.18
Practical Status-oriented													
Ad	2.05	1.66	1.67	1.80	1.79	1.88	1.61	1.93	1.83	2.19	1.68	1.91	1.83
Ac	2.50	2.12	1.94	1.50	1.75	2.11	2.14	1.21	1.80	2.03	2.62	2.10	1.97
St	2.54	2.90	1.89	2.81	2.25	2.73	2.01	2.79	2.39	2.17	2.75	2.53	2.48
Total	5.40	4.24	3.54	4.57	4.27	5.28	3.57	4.22	3.96	4.88	5.03	4.60	4.45

TABLE XIV-3. SAN JOSE: DIFFERENCES BETWEEN SUBGROUP MEANS AND COMPOSITE MEAN ON CCA SCALES

Scale	Subgroups										
	Engl. (N=17)	Psych. (N=35)	Soc. Sci. (N=16)	Other Sci. (N=12)	Biol. Sci. (N=22)	Math-Phys. (N=18)	Elem. Educ. (N=15)	Acad. Educ. (N=11)	Engr. (N=84)	Bus. Admin. (N=59)	Art (N=17)
Intellectual Humanistic Esthetic											
Ad	-1.18	- .36	- .67	- .19	.23	- .14	- .83	1.19	.49	.05	- .07
Ac	.81	.24	- .94	- .25	1.43	.42	- .98	1.02	- .05	- .74	.57
St	- .31	.08	.20	- .85	.80	.18	.70	.66	- .03	- .65	.75
Total	- .70	- .05	-1.42	-1.30	2.45	.45	-1.12	2.86	.40	-1.36	1.24
Friendly Group Welfare											
Ad	- .12	-1.03*	.36	- .77	.91	- .21	.50	.05	.25	- .13	.17
Ac	- .61	.39	.46	- .92	.92	- .73	1.06	.24	- .49	.16	.33
St	.08	- .64	- .08	-1.00	.85	-1.00	.60	.40	.22	- .02	.14
Total	- .64	-1.27	.74	-2.68	2.69	-1.93	2.17	.69	- .01	.02	.65
Scientific Independent											
Ad	.07	- .04	.69	- .14	.24	- .14	- .34	.46	.09	- .08	- .81
Ac	-2.18	1.55**	.21	.58	.63	- .86	- .49	-1.33	.33	- .79*	.87
St	- .28	- .17	- .22	1.64*	- .01	.72	- .95	- .37	.80**	- .75*	-1.40*
Total	-2.39	1.35*	.68	2.07	.85	- .29	-1.78	-1.24	1.23*	-1.63*	-1.33
Practical Status-oriented											
Ad	- .26	- .11	.22	- .05	.30	- .86	.76	.12	- .12	.01	.62
Ac	-1.32	-1.19**	.34	.65	.33	- .18	.95	- .58	.25	.49	- .61
St	0.00	- .91	- .31	-1.33	.05	- .61	1.20*	.82	- .12	.46	1.06
Total	-1.57	-2.21*	.25	- .73	.69	-1.64	2.92**	.37	.01	.97	1.07

NOTE: * sign indicates $p < .05$; ** sign indicates $p < .01$

TABLE XIV-4

SAN JOSE: DIFFERENCES BETWEEN SUBGROUP MEANS AND THE COLLEGE MEAN
ON OBJECTIVES, SATISFACTIONS, AND GRADES

	N	OBJ 1	OBJ 2	OBJ 3	OBJ 4	OBJ 5	OBJ 6	OBJ 7	OBJ 8	OBJ 9	OBJ 10	OBJ 11	SAT 1	SAT 2	SAT 3	GRADES
College	296	2.48	2.52	2.39	2.67	2.28	2.07	2.59	2.25	2.32	2.51	2.32	1.92	1.85	2.23	3.82
English	18	.30	-.89**	-.14	.61**	.40	.25	-.06	.13	.44**	.63**	-.97**	.10	.26	-.18	.82*
Psychology	34	.30*	-.26	.06	.61**	.31	.31*	.17	.34**	.44**	.18	.02	-.14	-.18	-.07	.18
Soc. Sci.	18	.13	-.89**	-.11	.42	.22	-.12	.03	.00	-.18	-.05	.56**	.04	-.33	.17	.00
Other Sci.	13	-.37**	-.48*	.01	-.25	-.64**	-.16	-.26	.10	-.10	-.11	.63**	.07	-.30	-.23	-.49
Biol. Sci.	22	.05	.09	.39*	-.04	.04	-.03	-.03	-.18	.08	.08	.61**	.06	.14	.04	.11
Math-Phys.	19	.11	.05	.60**	.30	-.35	.12	-.09	.46*	-.05	.09	.74**	-.08	.06	.02	.56
Elem. Educ.	15	.05	-.27	-.47*	-.33	.21	-.14	.02	-.39*	-.04	.15	-.61*	-.29	-.22	.16	-.18
Acad. Educ.	15	.21	.05	.06	.40*	.21	.27	.19	.05	.18	.44	.03	.35	.35	.02	.46
Engineering	88	-.17*	.35**	.24*	-.37**	-.23*	-.20*	-.08	-.01	-.17	-.49**	.55**	-.03	.04	-.11	-.26*
Bus. Admin.	64	-.17	.17	-.48**	-.10	.06	.02	.07	-.08	-.08	-.11	-.56**	-.03	.02	.05	-.25*
Art	19	.22	.10	-.22	-.12	.22	.18	-.02	-.36	-.29	1.01**	-.89**	-.08	-.47	-.03	-.29

NOTE: * sign indicates p <.05; ** sign indicates p <.01
In the top row of this table, a low score indicates a favorable rating.
In the rest of the table, the minus (-) signs have their customary meaning of "less favorable."

TABLE XIV-5

SAN JOSE: RANK ORDER OF ESTIMATED PROGRESS TOWARD OBJECTIVES

	Rank	Total	Engl.	Psych.	Soc. Sci.	Other Sci.	Biol. Sci.	Math-Phys.	Elem. Educ.	Acad. Educ.	Engr.	Bus. Admin.	Art
Highest	1	6	6	6	5	11	11	11	5	6	11	6	10
	2	8	5	9	6	8	3	3	6	5	3	5	6
	3	5	9	8	4	6	6	8	9	10	2	8	5
	4	9	10	5	8	3	5	6	10	9	8	2	1
	5	11	4	4	1	9	9	1	1	8	6	9	2
	6	3	8	1	3	10	1	4	7	1	9	7	3
	7	1	1	11	9	1	2	9	8	4	5	10	7
	8	10	3	3	7	7	8	10	2	11	1	1	8
	9	2	7	10	10	4	10	2	3	3	7	4	9
	10	7	11	7	11	5	7	5	11	7	10	3	4
Lowest	11	4	2	2	2	2	4	7	4	2	4	11	11

NOTE: Bracketed numbers indicate tied ranks.

TABLE XIV-6. SAN JOSE: ANALYSIS OF SIGNIFICANT RELATIONSHIPS BETWEEN ENVIRONMENT AND ATTAINMENT

IHE		W		SI		PS	
Press	Progress 1, 4, 10	Press	Progress 5, 7	Press	Progress 3, 8, 11	Press	Progress 2
-	Psy (1) +	Psy (Ad) -	+	Psy (Ac) +	Psy (8) +	Psy (Ac) -	-
	Psy (4) +			Psy (Tot.) +		Psy (Tot.) -	
		-	O.S. (5) -				
-	Engl (4) +			O.S. (St) +	O.S. (11) +	Ed e (St) +	-
	Engl (10) +	-	Engr (5) -			Ed e (Tot.) +	
				Engr (St) +	Engr (3) +		
+	Ed a (4) +			Engr (Tot.) +	Engr (11) +	-	Engl (2) -
				Art (St) -	Art (11) -		
				B.A. (Ac) -	B.A. (3) -		
				B.A. (St) -	B.A. (11) -		
				B.A. (Tot.) -			
				-	Engl (11) -		
	Engr (1) -				Ed e (3) -		
+	Engr (4) -				Ed e (8) -		
	Engr (10) -			-	Ed e (11) -		

TABLE XIV-6 (Concluded)

IHE		W		SI		PS	
Press	Progress 1, 4, 10	Press	Progress 5, 7	Press	Progress 3, 8, 11	Press	Progress 2
						+	S.S. (2) -
				+	Biol (3) +		
+	Art (10) +				Biol (11) +		
						-	O.S. (2) -
				-	M-P (3) +		
					M-P (8) +		
-	O.S. (1) -				M-P (11) +		
						+	Engr (2) +
				+	S.S. (11) -		

SUMMARY OF RELATIONSHIPS

	No. of Examples	
Environment and Attainment both significant and consistent	5	17
Environment significant and Attainment consistent	1	
Attainment significant and Environment consistent	11	
Neutral	0	
Environment significant and Attainment inconsistent	2	8
Attainment significant and Environment inconsistent	6	
Environment and Attainment both significant but inconsistent	0	
	25	

NOTE: B.A. = Business Administration; Ed a = Education, Academic; Ed e = Education, Elementary; M-P = Math-Physics; O.S. = Other Sciences; S.S. = Social Sciences

TABLE XIV-7. SAN JOSE: "SIGN TEST" ANALYSIS OF RELATIONSHIPS BETWEEN ENVIRONMENT AND ATTAINMENT

Subgroups	IHE		W		SI		PS	
	Press	Progress 1, 4, 10	Press	Progress 5, 7	Press	Progress 3, 8, 11	Press	Progress 2
English	-	+ ⊕ ⊕	-	+ -	-	- + ⊖	-	⊖
Psychology	-	⊕ ⊕ +	⊖	+ +	⊕	+ ⊕ +	⊖	-
Social Sciences	-	+ + -	+	+ +	+	- o ⊖	+	⊖
Other Sciences	-	⊖ - -	-	⊖ -	⊕	+ + ⊕	-	⊖
Biological Sciences	+	+ - +	+	+ -	+	⊕ - ⊕	+	+
Math-Physics	+	+ + +	-	- -	-	⊕ ⊕ ⊕	-	+
Elementary Education	-	+ - +	+	+ +	-	⊖ ⊖ ⊖	⊕	-
Academic Education	+	+ ⊕ +	+	+ +	-	+ + +	+	+
Engineering	+	⊖ ⊖ ⊖	-	⊖ -	⊕	⊕ - ⊕	+	⊕
Business Administration	-	- - -	+	+ +	⊖	⊖ - ⊖	+	+
Art	+	+ - ⊕	+	+ -	⊖	- - ⊖	+	+

SUMMARY OF RELATIONSHIPS

Pattern	No. of Examples	
Fully consistent	24	29
Mainly consistent	5	
Neutral	3	
Mainly inconsistent	3	12
Fully inconsistent	9	
	44	

NOTE: ○ indicates a significant difference from the composite mean.

TABLE XIV-8

SAN JOSE: DIFFERENCES BETWEEN ADMINISTRATIVE, ACADEMIC, AND STUDENT SUBSCORES (66%+ METHOD)

CCA Scores Based on 66%+ Consensus

	IHE	W	SI	PS
Ad	7	6	8	6
Ac	5	7	5	7
St	1	7	4	8
Total	13	20	17	21

Differences

		San Jose	Composite of Nine Colleges
IHE	Ad vs. Ac	2	.1
	Ad vs. St	6	2.2
	Ac vs. St	4	2.1
W	Ad vs. Ac	-1	0
	Ad vs. St	-1	-1.3
	Ac vs. St	0	-1.3
SI	Ad vs. Ac	3	- .2
	Ad vs. St	4	2.8
	Ac vs. St	1	3.0
PS	Ad vs. Ac	-1	.3
	Ad vs. St	-2	-1.1
	Ac vs. St	-1	-1.4

NOTE: Minus (-) signs indicate that the first item of the pair is lower than the second.

TABLE XIV-9

SAN JOSE: MEAN SCORES OF SUBGROUPS AND THE TOTAL COLLEGE ON SELECTED SCALES OF THE CALIFORNIA PSYCHOLOGICAL INVENTORY

	N	Responsibility	Sociability	Self-control	Achievement via Independence	Intellectual Efficiency
Total College	324	30.00	24.55	27.49	21.10	38.66
English	18	31.81	26.25	28.69	24.06**	41.44**
Psychology	34	29.61	26.03	26.55	23.45**	40.94**
Social Sciences	18	31.88	26.69*	31.25*	23.31**	40.50
Other Sciences	13	32.46**	22.62	27.00	21.08	40.23
Biological Sciences	22	30.24	23.71	27.59	20.76	37.35
Math-Physics	19	30.22	23.78	27.00	21.39	39.11
Elementary Education	15	31.07	24.14	27.14	19.79	37.14
Academic Education	15	32.21	25.93	30.86	21.00	39.64
Engineering	88	29.54	23.96	29.12*	20.59	37.93
Business	64	28.39*	24.09	24.64**	19.91*	37.93
Art	19	29.44	24.61	24.56	19.28	36.06

NOTE: * sign indicates $p < .05$; ** indicates $p < .01$

TABLE XIV-10

SAN JOSE: ALL TOTALLY CONSISTENT PATTERNS BETWEEN ENVIRONMENT AND ATTAINMENT AND PERSONALITY AND ATTAINMENT - GROUPED UNDER ENVIRONMENTAL VARIABLES

	IHE					W					SI					PS				
	Re	Sy	Sc	Ai	Ie	Re	Sy	Sc	Ai	Ie	Re	Sy	Sc	Ai	Ie	Re	Sy	Sc	Ai	Ie
OBJ 1				N	N		N	N		N	-				N	-		-		
2	-	-	-	-	-								+			+	+	+	+	+
3	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+	-			N	-
4	+	+	+		+		N		N		-	N	O	N		-	-	-	-	-
5	+	N	+	+	+	+	N	+	+	+		N			-	O	N		O	
6	+	N		+	+	+	N	O		N	-	N		-		-	N		-	
7	N		N	+		N	N				N	N	N	-		N	N	N		
8	+		+	+	N	-		-	-	-		N		N	N	-	-	-	-	-
9	+		+	+						-		N				-	-	-	-	-
10	+	+	+	+	+	+	+	+	+	+	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+					
SAT 1		N	+	N	N	N	N		N	N	N	N		N	N	N	N			N
2	N				N	N		N	N	N	N			N	N	N				N
3		N			N	+	N	+			-	N	-	-	N	+	N			N
GRADES				N	N	+	-		N	N		-		N			-	-		

Key to Symbols:

+ = totally consistent with press
- = totally anti-press
N = totally consistent with personality
O = totally anti-personality
blank = all other patterns

Re = Responsibility
Sy = Sociability
Sc = Self-control
Ai = Achievement via Independence
Ie = Intellectual Efficiency

TABLE XIV-10 (concluded)

SUMMARY OF PATTERNS:

	For Objectives				For Satisfactions				For Grades			
	+	-	N	O	+	-	N	O	+	-	N	O
IHE	23	15	7		1		7				2	
W	10	15	10	1	2		9		1	1	2	
SI	11	11	12	1		3	9			1	1	
PS	5	26	6	2	1		7			2		
	49	67	35	4	4	3	32	0	1	4	5	0

No. of	For Objectives	For Satisfactions	For Grades
Patterns	155 (70%)	39 (65%)	10 (50%)
Nonpatterns	65	21	10
	220	60	20

TABLE XIV-11

SAN JOSE: ALL TOTALLY CONSISTENT PATTERNS BETWEEN ENVIRONMENT AND ATTAINMENT AND PERSONALITY AND ATTAINMENT - GROUPED UNDER PERSONALITY VARIABLES

		Re				Sy				Sc				Ai				Ie			
		H	W	S	P	H	W	S	P	H	W	S	P	H	W	S	P	H	W	S	P
OBJ	1			-	-		N				N		-	N				N	N	N	
	2	-			+	-			+	-		+	+	-			+	-			+
	3	-	-	+	-	-	-	+		-	-	+		-	-	+	N	-	-	+	-
	4	+		-	-	+	N	N	-	+		0	-		N	N	-	+			-
	5	+	+		0	N	N	N	N	+	+			+	+		0	+	+	-	
	6	+	+	-	-	N	N	N	N		0			+		-	-	+	N		
	7	N	N	N	N		N	N	N	N		N	N	+		-					
	8	+	-		-			N	-	+	-		-	+	-	N	-	N	-	N	-
	9	+			-			N	-	+			-	+			-		-		-
	10	+	+	-	-	+	+	-	-	+	+	-	-	+	+	-	-	+	+	-	-
	11	-	-	+		-	-	+		-	-	+		-	-	+		-	-	+	
SAT	1		N	N	N	N	N	N	N	+				N	N	N		N	N	N	N
	2	N	N	N	N						N				N	N		N	N	N	N
	3		+	-	+	N	N	N	N		+	-				-		N		N	N
GRADES			+				-	-	-				-	N	N	N		N	N		

SUMMARY OF PATTERNS:

For Objectives

	+	-	N	O
Re	12	17	4	1
Sy	6	10	16	
Sc	11	12	4	2
Ai	11	14	5	1
Ie	9	14	6	
Total	49	67	35	4

For Satisfactions

	+	-	N	O
Re	2	1	7	
Sy			8	
Sc	2	1	1	
Ai		1	5	
Ie			11	
Total	4	3	32	0

For Grades

	+	-	N	O
Re	1			
Sy		3		
Sc		1		
Ai			3	
Ie			2	
Total	1	4	5	0

CHAPTER XV

SUMMARY, CONCLUSIONS, AND SPECULATIONS

It is obvious to the casual observer, as well as from more systematic inquiries, that college environments differ from one another. It is equally obvious that college students differ from one another. Moreover, between high school and college there is a selective sorting process which results in a general compatibility between students and colleges that is at least greater than any random distribution would produce. Some of this selective sorting is the result of mutual attraction--between the interests of students in various vocational or special fields and the availability of curricula relevant to those interests, between the intellectual talents and dispositions of students and the intellectual demands of the college, between the religious values of home and school, and between other sorts of similarities in the person and in the environment. In the majority of cases, however, it is probably fair to say that students and colleges come together because of mutual necessity rather than mutual attraction--the place is near and the price is right. Within most institutions, consequently, one finds a very diverse group of students and a diverse educational program, while at the same time and across the country at large one also finds a selective sorting based on mutual attraction and choice.

The goodness of fit between a student and his college has a bearing on his success in that college. Some colleges are in a position to be highly selective and have had long experience in finding students most likely to succeed in their particular programs. In medical schools, for example, about 95 percent of the students admitted ultimately obtain their M.D. degrees. At Harvard, nine out of ten entering freshmen ultimately graduate from Harvard. At other schools, where admission is open to a much more heterogeneous group of students, as in some State colleges for example, it is common to find that only about 35 percent of the entering students remain to complete their degree programs. Nationally it has been estimated that about 40 percent of entering freshmen graduate four years later from the college they entered, and that about 60 percent of entering freshmen ultimately graduate from some college, many having transferred to another institution or interrupted their college career for a period of time. Presumably, some lack in the goodness of fit between student and college accounts, in part, for these results--more dropouts, more transfers, and fewer graduates. Better national statistics are needed to check the validity of these judgments, but the bits and pieces of current evidence seem generally to support the proposition that compatibility and success are related, and perhaps closely, to one another.

The central theme in the studies of students and environments in the nine colleges which have provided data for the present research is that this national phenomenon of selective distribution, with compatibility being related to success, is also a local phenomenon which can be seen within the environment of single institutions. In any moderately complex college or university one presumably will find some parts which differ from other parts--the Business school from the Engineering school, for example. Among these subenvironments students will be selectively distributed with varying degrees of compatibility. And compatibility, in turn, will be related to success. To the extent that these propositions are supported by the data, the effectiveness of an institution (judged by student morale and progress toward relevant objectives) can be increased by administrative leadership and educational guidance which helps more students find their way more readily into compatible subcultures within the larger institutional complex. But even more generally, an analysis of the dynamics of the college environment provides basic data for institutional self-study and assessment, and therefore cues to the development of plans for institutional improvement.

The first question, then, is simply this: Are there academic subcultures whose environments deviate significantly from the environment of the college as a whole? The answer is "yes, but...." In Table XV-1 the first column records, for each college, the number of instances in which any subgroup score on the CCA differed significantly from the college composite. Out of all possible differences 11 percent were significant. The number is not large, but in many cases no differences were expected because of the presumably homogeneous nature of certain colleges selected for the study, because of the nature of certain subgroups, and because not all of the CCA scores refer explicitly to the characteristics of subgroups. The administrative subscores on the CCA, for example, refer to the college as a whole, not to the specific subgroup. For this reason, the second column in Table XV-1 reports the number of significant differences between subgroups and the composite when the administrative subscores of the CCA are omitted. In this more appropriate situation, 13 percent of the possible number of differences are significant. At Bennington and Swarthmore there were no subgroups outside of liberal arts. At De Pauw there was one--Education. At all other colleges there were two or more subgroups, even not counting Education, that were outside of liberal arts. In the two colleges that are all or primarily liberal arts in character 6 percent of the possible differences between subgroups and the composite are significant, a number no larger than one might expect to find by chance. In the more complex colleges, however, the proportion is 15 percent, a figure three times greater than chance expectancy. Considering only the largest and most complex institutions--namely, Eastern Washington, Mississippi, Florida, and San Jose--the proportion is 18 percent.

Although the number of significant differences is certainly not large, their importance is indicated by their location, reported in Table XV-2. Here one can see that such differences as occur tend to be concentrated in certain types of subgroups. The highest concentrations are in Nursing and Business, followed by the Sciences, Education, and

TABLE XV-1

NUMBER AND PERCENT OF INSTANCES IN WHICH ANY SUBGROUP DIFFERS SIGNIFICANTLY FROM THE COLLEGE COMPOSITE ON ENVIRONMENT, PERSONALITY, AND ATTAINMENT SCORES--ALL COLLEGES

Colleges	On All Environment Scores		On Environment Scores with Administrative Subscores Omitted		On Ratings of Nine Relevant Objectives		On Ratings of Three Satisfaction Items		On Grades		On Relevant Personality Scores	
	N	%	N	%	N	%	N	%	N	%	N	%
Bennington	0/ 48	0	0/ 36	0	0/ 27	0	0/ 9	0	0/ 3	0		
Swarthmore	8/ 96	8	8/ 72	11	10/ 54	19	1/ 18	6	1/ 6	17		
Antioch	5/ 160	3	5/120	4	12/ 90	13	2/ 30	7	1/10	10		
St. Olaf	20/ 112	18	17/ 84	20	9/ 54	17	1/ 18	6	0/ 6	0		
De Pauw	10/ 144	7	6/108	6	12/ 81	15	3/ 27	11	0/ 9	0	6/ 27	22
Eastern Washington	15/ 144	10	12/108	11	16/ 81	20	2/ 27	7	0/ 9	0	9/ 54	17
Mississippi	25/ 96	26	22/ 72	31	19/ 54	35	0/ 18	0	3/ 6	50	8/ 36	22
Florida	24/ 112	20	21/ 84	25	13/ 63	21	3/ 21	14	1/ 7	14	14/ 42	33
San Jose	14/ 176	8	13/132	10	33/ 99	32	0/ 33	0	3/11	27	9/ 44	20
All Colleges	121/1088	11	104/818	13	124/603	21	12/201	6	9/67	13		
Last Five Colleges Only	88/ 672	13	74/504	15	93/378	25	8/126	6	7/42	17	46/203	23
Four Largest and Most Complex Colleges Only	78/528	15	68/396	18	81/297	27	5/ 99	5	7/33	21	40/176	23

TABLE XV-2

LOCATIONS OF SIGNIFICANT DIFFERENCES IN CCA SCORES BETWEEN VARIOUS SUBGROUPS AND THE COLLEGE COMPOSITE

Groups	Number of Groups	Direction of Difference	CCA Dimensions and Subscores																N	% of Possible Differences	
			IHE				W				SI				PS						
			Ad	Ac	St	Tot	Ad	Ac	St	Tot	Ad	Ac	St	Tot	Ad	Ac	St	Tot		On All Scores	With Ad Scores Omitted
Sciences	13	+										3	4	2		1			29	14%	15%
		-	1		1	1	5	2	1	4						2	1	1			
Social Sciences	12	+		1				1		1		3		1			1		15	8%	10%
		-					1		1	1		1				2		1			
Humanities	14	+	1	1			2						1	1	1				13	6%	5%
		-							1	1		1	1	1		1					
Arts	5	+			1	1			1	1									7	9%	12%
		-						1					1				1				
Engineering	3	+						1		1			1	1					4	8%	11%
		-																			

TABLE XV-2 (concluded)

Groups	Number of Groups	Direction of Difference	CCA Dimensions and Subscores																N	% of Possible Differences	
			IHE				W				SI				PS					On All Scores	With Ad Scores Omitted
			Ad	Ac	St	Tot	Ad	Ac	St	Tot	Ad	Ac	St	Tot	Ad	Ac	St	Tot			
Education	9	+			1	1	1	1	1	1					1	1	2	3	16	11%	13%
		-		1									2								
Business	5	+														3	1	1	18	23%	30%
		-		3		2						3	2	3							
Nursing	2	+	1		1	1	2	2	2	2							1	1	15	47%	50%
		-											1			1					
Others	5	+		1									1						4	5%	5%
		-													1			1			
Totals	68		3	7	4	6	11	8	7	12	0	11	14	9	3	11	7	8	121	11%	13%
			20				38				34				29						

All Liberal Arts Groups	10%
All Vocational Groups	18%

the Arts. The Nursing subgroups are typically high in the Friendly, Group Welfare dimension. The Business subgroups are typically low on the Humanistic and Scientific dimensions, but typically high on the Practical, Status-oriented emphasis. The Sciences groups are typically low on the W dimension and high on the SI dimension. Education groups are typically high on the PS scales and the W scales. In the other subgroups no concentrated patterns are evident. Not only, then, are some subgroups more often different than others from the college composite, but within these subgroups the significant differences are often concentrated in certain dimensions and directions.

The Sciences, Social Sciences, Humanities, and Arts can be considered as liberal arts groups. Within this large category 10 percent of the possible differences are significant. Engineering, Education, Business, Nursing, and others (which include one group each in Pharmacy, Journalism, Home Economics, Industrial Arts, and Health and Physical Education) may all be considered as vocational groups. In this general category 18 percent of the possible differences are significant. Within the liberal arts, but omitting the Sciences groups, significantly different subgroup scores are found in 8 percent of the possible comparisons--a figure not much greater than chance expectancy. Science groups, however, are significantly deviant in 15 percent of the possible comparisons, or three times greater than chance expectancy. And the Vocational groups, with 18 percent of the possible differences being significant, are even more frequently deviant. In the composite of the nine colleges studied there seem to be three cultures--a vocational culture, a science culture, and a humanities-social science culture. The last of the three is seldom deviant from the college as a whole.

Over all, most subgroups describe their environment in ways that do not differ significantly from the general environment of the college. The importance of the total college atmosphere is highlighted by this fact. At the same time, the number of significant differences obtained in the present studies is a very conservative number. With more reliable measures, with a larger number of students, and with more refined statistical treatments, the number of significant differences would be greater. Rather than attempting to shore up soft data with hard statistics, the strategy of analysis has been to cumulate, in each college and across all colleges, the number of times certain events and conditions occur. There is a safety in numbers, especially in numbers that are both conservative and cumulative. Such numbers can identify the main events, conditions, and direction of relationships with reasonable reliability; but one's conclusions will necessarily underestimate both the magnitude of events and the magnitude of relationships between them. It is for these reasons, in part, that the answer to the first question was "yes, but...." There are significantly deviant subgroups; they tend to be of certain types; and there are probably more of them than the present study reveals. But the atmosphere of the college as a whole, even in the case of the largest or most complex colleges, is dominant. Even if the number of deviant subgroups was twice as great as the present study has revealed, there would still remain a large majority whose characteristics were not significantly different from the college as a whole.

The second question is about the students rather than the environments. Is there some selective distribution of students among the various environment? Going back to Table XV-1 provides an answer to this question. In the right-hand column, the table shows the number of times the mean score of a subgroup on any personality test differed from the average score in the college. The figure at the bottom of the column indicates that, in the five colleges where personality test data were analyzed, there were significant differences between the subgroups and the college composite in 23 percent of the comparisons. In other words, differences between subgroups in the personality characteristics of their members occurred more frequently than differences between subgroups in environmental press. The location of these significant differences shows a concentration in certain subgroups that is generally similar to the concentration of environmental press differences in the subgroups. Table XV-3 shows this information for the relevant personality measures. In the table the number of comparisons is greater than the numbers shown in Table XV-1 because some personality measures were counted as relevant to more than one objective. The proportions, however, are not affected. The highest proportion of differences are in the Business and Nursing groups. Business students, for example, tend to be below the average of their college on personality characteristics relevant to the "IHE,""W," and "SI" dimensions, but above their college average on characteristics relevant to the "PS" dimension. Science subgroups show a pattern of deviation that is high on both the "SI" and "IHE" characteristics, and so do Social Science subgroups. Humanities groups are most often different from the typical students in their college on characteristics related to Humanistic values.

A third question--namely, is there some differential achievement of various objectives among members of different subgroups?--is also answered in Table XV-1. Across all colleges and subgroups, the ratings of progress toward nine relevant objectives were significantly deviant in 21 percent of the comparisons. In the five colleges in which personality data were analyzed, the progress ratings were significantly deviant in 25 percent of the comparisons; and in the four largest and most complex colleges the figure was 27 percent. Subgroup ratings of satisfaction with college life do not differ from the college composite with any more than chance frequency. With respect to grades, there are some subgroup differences, but the number of comparisons is so small that the corresponding percentages cannot be regarded as very reliable.

Like the differences in environmental press, the differences in attainment ratings also tend to be concentrated in certain types of subgroups. This is shown in Table XV-4. At the bottom of the table one can see from the various totals that the objectives which account for the greatest number of deviant achievement ratings are Objective 11 (understanding science and technology), Objective 2 (vocational preparation), and Objective 10 (developing an enjoyment and appreciation of art, music, and literature). It is interesting to note that these correspond to the three cultures mentioned earlier--vocational, scientific, and humanistic. The highest proportion of significantly deviant

TABLE XV-3

LOCATION OF SIGNIFICANT DIFFERENCES IN PERSONALITY SCORES BETWEEN VARIOUS SUBGROUPS AND THE COLLEGE COMPOSITE

Group	Number of Subgroups	Direction of Difference	Personality Counterparts to CCA Dimensions				N	% of Possible Differences
			"IHE"	"W"	"SI"	"PS"		
Sciences	13	+	3	1	4		11	22%
		-		2		1		
Social Sciences	11	+	3	2	3	1	10	28%
		-		1				
Humanities	14	+	6	1	3		10	27%
		-						
Arts	5	+					0	0
		-						
Engineering	3	+					0	0
		-						
Education	9	+		2		1	8	15%
		-	2		2	1		
Business	5	+				4	13	47%
		-	4	3	2			
Nursing	2	+	1	2			7	100%
		-	1		1	2		
Others	5	+				1	2	7%
		-	1					
Totals	67		21	14	15	11	61	23%

TABLE XV-4

LOCATION OF SIGNIFICANT DIFFERENCES IN RATINGS OF PROGRESS TOWARD OBJECTIVES BETWEEN VARIOUS SUBGROUPS AND THE COLLEGE COMPOSITE

Groups	Number of Groups	Direction of Difference	Objectives Relevant to: IHE			W		SI			PS	Other Objectives		N	% of Possible Differences: All Objectives	% of Possible Differences: Nine Relevant Objectives
			1	4	10	5	7	3	8	11	2	6	9			
Sciences	13	+						7	1	13	1			32	22%	26%
		-	1	1		4	3						1			
Social Sciences		+	2	1			2		1	1		2	2	17	14%	13%
		-			1			1		2	2					
Humanities	14	+	2	4	3				1				3	29	19%	21%
		-				1	1			7	7					
Arts	5	+			4									7	13%	16%
		-						1		2						
Engineering	3	+						2		3	2			13	39%	44%
		-	1	1	2	1						1				

TABLE XV-4 (concluded)

Groups	Number of Groups	Direction of Difference	Objectives Relevant to:											N	% of Possible Differences	
			IHE			W		SI			PS	Other Objectives			All Objectives	Nine Relevant Objectives
			1	4	10	5	7	3	8	11	2	6	9			
Education	9	+		2	1	1					3			13	13%	16%
		-		1				1	1	3						
Business	5	+				1	1							10	18%	20%
		-	1		2			1	1	2		1				
Nursing	2	+				1				1	2			6	27%	33%
		-							2							
All Others	5	+					1			1	2			7	13%	13%
		-			1					1			1			
Totals	67		7	10	14	9	8	13	7	36	19	4	7	134	18%	21%
			31			17		56			19	11				

achievement ratings are in the Engineering groups--39 percent. These are typically high in their estimated achievement of goals relevant to the Scientific, Independent press and the Practical, Status-oriented press, but typically low in estimated attainment of goals related to the Intellectual, Humanistic, Esthetic press. Science groups are typically high on SI related goals, low on W (Friendly, Group Welfare) related goals. Humanities groups are generally low in progress toward Objectives 11 (science and technology) and 2 (vocational training); but are generally high in progress toward humanistic goals.

From all the foregoing analyses several generalizations can be made. First, there are academic subgroups whose environment differs significantly from that of the college as a whole. Second, there are academic subgroups whose members differ significantly from the general student body in various personality characteristics. Third, there are significant differences between subgroups and the college as a whole in the estimated attainment of various educational goals.

To what extent are these three sets of conditions interrelated? Is the attainment of various objectives more frequently and more strongly associated with the environmental emphasis in the subgroups or with the personality characteristics of the subgroup members? What relationships to achievement are found when the environmental and personality characteristics of the subgroups are judged to be mutually supportive? And what happens when these characteristics are not mutually supportive? Data for answering these questions are summarized in the next three tables.

In Table XV-5 all relationships between environment and attainment and between personality and attainment are recorded. The mean environment score of a subgroup is classified as above or below the college average. The mean personality score of the subgroup members is similarly classified as above or below the college average. And the mean attainment rating of an objective is classified as above or below the college average. As in the reports of the separate colleges, certain environmental emphases and certain personality variables are judged to be relevant to the attainment of certain objectives. The table brings together the sum of all the relationships reported for the separate colleges. The attainment of objectives is consistent with a relevant environmental emphasis in a ratio of about 2 to 1. The same is true in relation to relevant personality characteristics.

Table XV-6 summarizes only those relationships in which one or both of the related variables differ significantly from the college average (environment and attainment, or personality and attainment). In the five colleges where personality data were available, personality and attainment are consistent (rather than inconsistent) in a ratio of 2 to 1. When both measures are significantly different from the college average, the ratio is 2 1/2 to 1. In the same five colleges the corresponding ratios between environment and attainment are 2 1/2 to 1 and 6 1/2 to 1.

TABLE XV-5

DIRECTIONAL RELATIONSHIPS BETWEEN ENVIRONMENT AND ATTAINMENT AND BETWEEN PERSONALITY AND ATTAINMENT IN ALL SUBGROUP COMPARISONS

Relationship	Environment and Attainment		Environment and Attainment		Personality and Attainment	
	All Colleges		Five Colleges		Five Colleges	
Fully consistent	113	164	78	106	127	148
Mainly consistent	51		28		21	
Neutral	26		16		24	
Mainly inconsistent	20	78	7	46	25	89
Fully inconsistent	58		39		64	
	268		168		261	
Ratio: consistent to inconsistent	2 to 1		2 1/3 to 1		1 2/3 to 1	
Ratio: fully consistent to fully inconsistent	2 to 1		2 to 1		2 to 1	

TABLE XV-6

SIGNIFICANT RELATIONSHIPS BETWEEN ENVIRONMENT AND ATTAINMENT AND BETWEEN PERSONALITY AND ATTAINMENT IN ALL SUBGROUP COMPARISONS

Relationships	Environment and Attainment		Environment and Attainment		Personality and Attainment	
	All Colleges		Five Colleges		Five Colleges	
Both significant and consistent	35	95	26	66	23	90
Environment or Personality significant and Attainment consistent	18		12		18	
Attainment significant and Environment or Personality consistent	42		28		49	
Neutral	5		3		1	
Environment or Personality significant and Attainment inconsistent	11	36	9	25	9	47
Attainment significant and Environment or Personality inconsistent	16		12		29	
Both significant but inconsistent	4		4		9	
	131		94		138	
Ratio: consistent to inconsistent	3 to 1		2 1/2 to 1		2 to 1	
Ratio: both significant and consistent to both significant and inconsistent	9 to 1		6 1/2 to 1		2 1/2 to 1	

Over all nine colleges the corresponding ratios between environment and attainment are 3 to 1 and 9 to 1. From these data one can say that when both environment and attainment or personality and attainment in a subgroup are significantly deviant from the college average, attainment and environment are consistent more frequently than attainment and personality.

Table XV-7 summarizes, for the five colleges in which both personality and environmental data are available, the relationships to attainment when these two potential influences are mutually supportive and when they are in conflict. Congruence between personality and environment means that on both measures the subgroup means were both above average or both below average in relation to the college composite. Consistent means that the subgroup attainment ratings of relevant objectives were either above the college average or below the college average in the direction to be expected from the environmental and personality characteristics of the group. From the data in this table it is evident that personality and environmental characteristics of a subgroup are more likely to be congruent than noncongruent--60 percent to 40 percent. When they are congruent, attainment is consistent with their combined influence, rather than inconsistent, in a ratio of 3 1/3 to 1. When they are not congruent, attainment is consistent with the environmental emphasis, rather than with the personality characteristic, in a ratio of 1 1/3 to 1. One can suggest from these results that the 40 percent of cases (104 out of 261 different subgroup comparisons) in which personality and environmental characteristics are not congruent represent opportunities for improvement in the effectiveness of education. Or, put another way, the difference between the ratios of 1 1/3 to 1 and 3 1/3 to 1 suggest the increase in relevant achievement which might result from a more appropriate distribution of students among the various subcultures of the college.

In the next summary of relationships among relevant environment, personality, and attainment scores, all students in a college are sorted into a series of above- and below-average groups. First, the students are divided into above- and below-average environmental press groups--that is, those who are in subgroups having a relevant press score above the college average, and those who are in subgroups having a relevant press score below the college average. Next, in each of these two groups, the students are divided into above- and below-average personality groups--that is, those whose scores on a relevant personality test are above the college average, and those whose scores are below the college average. Then, for each of these four groups the average attainment rating of a relevant objective is computed and classified as being above or below the college average. The results from all five colleges combined are reported below:

		Relevant Attainment		
Environment	Personality	+	-	o
+	+	66	4	
+	-	32	37	1
-	+	32	37	1
-	-	7	62	1

TABLE XV-7

SUMMARY OF RELATIONSHIPS TO RELEVANT ATTAINMENT WHEN ENVIRONMENT AND PERSONALITY VARIABLES ARE CONGRUENT AND WHEN THEY ARE DIFFERENT - FOR ALL SUBGROUPS IN FIVE COLLEGES

Relationship	No. of Examples		Percent	
When Environment and Personality are congruent, the relationships to relevant Attainment are:				
fully consistent	92	110	35%	42%
mainly consistent	18		7%	
neutral	14		5%	
mainly inconsistent	6	33	2%	13%
fully inconsistent	27		10%	
	157		60%	
But, when Environment and Personality are different, the relationships to relevant Attainment are:				
fully consistent with Environment	37	53	14%	20%
mainly consistent with Environment	16		6%	
neutral	12		5%	
mainly consistent with Personality	6	39	2%	15%
fully consistent with Personality	33		13%	
	104		40%	
Grand Total	261		100%	

Students who are in an above-average press situation, and whose relevant personality scores are also above average, report achievement ratings on relevant objectives that are above average in 66 out of 70 comparisons, or 94 percent. Under consistently below average conditions (double minuses), achievement ratings are also below average in 62 out of the 70 comparisons, or 89 percent. Where below average students are in above average environments, their achievement is below average in 37 out of the 70 comparisons, or 53 percent. When above-average students are in below-average environments, their achievement is also below average in 37 of the 70 comparisons, or 53 percent. There is, apparently, a slight tendency for above average students to be pulled down by below average environment. At the same time, and by the same slight tendency, below average students are not pulled up by above average environments.

A more rigorous and diagnostic look at various patterns of interaction is obtained by carrying the above procedures a step further. The method has been described in the Technical Note in the Appendix. Table XV-8 presents a summary of the numbers and locations of so-called totally consistent patterns of influence for all relevant personality, environmental, and criterion variables. In the first box in the first row of the table the top line is read as follows: when the IHE variable is related to students' attainment ratings of pertinent objectives, one finds 32 totally consistent press patterns of influence regardless of students' personality, 14 totally consistent personality patterns of influence regardless of IHE press, and 6 totally anti-personality patterns regardless of IHE press. In the box as a whole, there are many more totally consistent patterns related to the press influences than to personality influences--120 compared with 32. In the lower left-hand box, personality measures are associated with students' attainment ratings of objectives relevant to those measures. Here, one finds 15 totally consistent press patterns associated with the attainment of relevant objectives, regardless of students' scores on an "IHE" type of personality test; but one also finds 33 patterns totally consistent with "IHE" type personality factors, regardless of environmental press. Except for the personality variables judged to be related to the "PS" dimension of environmental press, where only two examples are found, other personality characteristics do have some totally consistent relationships to relevant attainment regardless of the environmental press. The sum total of these, however, is less than the sum total of consistent environmental influences noted above.

A quite different picture emerges when one takes satisfaction with college life as the criterion. Except for the Friendly, Group Welfare press of the environment, which is clearly related to students' satisfaction, most of the totally consistent patterns involve personality factors. Indeed, in the case of the "SI" environmental press, it is its opposite which is associated with the satisfaction measures. And among the personality measures, it is clearly those judged to be relevant to the "W" dimension that are most often totally consistent with the criterion of satisfaction.

TABLE XV-8

SUMMARY OF TOTALLY CONSISTENT PATTERNS OF INFLUENCE ON THE CRITERION VARIABLES OF ATTAINMENT, SATISFACTIONS, AND GRADES - FIVE COLLEGES

Patterns of Influence

	On the Attainment of Relevant Objectives				On Satisfactions with College Life				On Grades			
Environment	+	-	N	0	+	-	N	0	+	-	N	0
IHE	32		14	6	9	10	27	6	9	4	2	
W	27		9	1	30		23	6	1	11	6	
SI	50		9	2	1	20	29	9	10	1	2	
PS	11	11		1	16	1	24	8		5	9	2
	120	11	32	10	56	31	103	29	21	21	19	2
Number of Patterns	173 (66%)				219 (63%)				63 (54%)			
Nonpatterns	88				129				53			
Total	261				348				116			

Personality Counterparts of	+	-	N	0	+	-	N	0	+	-	N	0
"IHE"	15	7	33	1	14	10	22	10	4	4	10	1
"W"	15	4	27	1	14	5	51	2	9	5	3	
"SI"	14	19	31		13	11	16	9	2	4	10	1
"PS"	10	6	2	5	11	6	20	16	6	8		1
	54	36	93	7	52	32	109	37	21	21	23	3
Number of Patterns	190 (68%)				230 (62%)				68 (55%)			
Nonpatterns	90				142				56			
Total	280				372				124			

Key to Symbols:

+ = totally consistent with press
- = totally anti-press
N = totally consistent with personality
0 = totally anti-personality

In view of the increasing urbanization of higher education, paralleling the larger society in its concentration of people in every larger and often more impersonal groupings, one may well pause to consider the potential meaning of these data: for the extent to which students like their college experience seems to depend primarily on their finding in the college environment conditions which reward their own needs for friendship and communal experience. Yet it seems to be precisely this human need which is in danger of being unfulfilled by metropolitan concentration, whether civic or collegiate. Impersonality, privacy more than community, things more than lives--such emphases are often found in the large institutions of modern society, but they do not generate satisfaction with or in the institution. In the academic setting it is usually the science subcultures which possess these characteristics; and the students in these subcultures are usually least satisfied with their college life. No doubt science needs humanizing, as some philosophers have said since the beginnings of science, and urban complexes made more fit for the human spirit; but neither the subject matter of science nor the size of the institutions are probably the main contributors to dissatisfaction. What may be needed is a greater acceptance of multiple responsibilities--for personal and social development as well as for the mastery of things and theories, for human rewards as well as academic rewards--throughout the college and university environment.

Although the total number of patterns related to grades is small, the data in Table XV-8 at least suggest that the same two elements discussed above also play a differential role here. The Scientific, Independent press of the environment tends to be related to grades, regardless of students' personal characteristics; and student characteristics of independence and scientism tend to be related to grades regardless of the environmental press of the college--a complementary relationship. However, it is not the group welfare, friendly aspects of the environment but rather their complete opposite that are associated with grades. Grade-getting seems to emerge as a pretty hard-nosed business.

From the Technical Note in the Appendix, the reader will recall that the number of totally consistent patterns (either +, -, N, or 0) represent four out of 14 possible relationships. The likelihood of getting any one relationship by chance is therefore 1/14; and the likelihood of getting the four totally consistent patterns is 4/14, or 29 per cent. The percentages shown in Table XV-8 indicate that there is more than twice as much pattern as one might expect by chance in the relationships to the attainment of relevant objectives and to satisfactions with college life, and somewhat less than twice as much pattern as one might expect by chance in relation to grades. These figures are generally in line with the previous analyses which indicated that the attainment ratings of various objectives were consistent with a relevant environmental press or a relevant personality characteristic in a ratio of 2 to 1, or greater.

When the relationships between environment and attainment have been summarized and reported up to this point, the measure of environmental press has been the total score of the subgroup on each of the four major dimensions. It is conceivable that these relationships might be greater if only the "academic" press score of the subgroup were used, or if only the "student" press score were used. This possibility was therefore tested. When only the academic scores were used, the ratio of consistent to inconsistent relationships, over all nine colleges, was a little less than 2 to 1. When only the student scores were used, the ratio dropped to 1 1/2 to 1. It is therefore the total press of the subgroup, rather than any one aspect of it, that is more strongly associated with relevant attainment.

Still another way of looking at the composite data from all colleges is by correlational studies. There were 1,319 students who had completely answered all the items related to objectives, satisfactions, and grades. For this total number of students correlations were computed between each of these criterion measures and each of the environmental press measures. The correlations between environmental press dimensions and relevant objectives are shown in Table XV-9. The magnitude of these relationships is necessarily small. Several of the colleges had quite homogeneous environments and even in the most diverse colleges the subgroups did not differ significantly from the college as a whole in a large number of instances. The range of scores on the criterion variables is also small. Moreover, the procedure of combining students from different colleges (as opposed to forming a composite by adding together the data separately obtained in each college) is itself a questionable one: for some of the relationships found within a college become reversed when the definition of the environment is "colleges in general" rather than the explicit environment which gave meaning to the students' responses in the first place. Nonetheless it may be noted in the table that the total press scores typically had the highest relationships with the attainment ratings, and that the administrative subscores typically had the lowest relationships. Also, the correlations between the IHE press and its relevant objectives are clearly higher than the correlations between the PS press and its presumably relevant objectives.

Correlations between the environmental press dimensions and the other criteria of satisfactions and grades are shown in Table XV-10. Again from these correlations it is clear that satisfaction with the college is most strongly related to the Friendly, Group Welfare aspects of the environment, and almost as strongly to the Intellectual, Humanistic, Esthetic emphasis. There is little or no relationship between satisfaction and either the SI or the PS emphases. Grades are also unrelated to press scores.

Two other analyses are presented briefly before concluding this report. Out of general curiosity the question was raised as to whether subgroups of a common type--such as physical sciences--might not be more like one another than like the colleges in which they happen to be located. Since is science, one might suppose, whether at San Jose or

TABLE XV-9

CORRELATIONS BETWEEN ENVIRONMENTAL PRESS AND PROGRESS TOWARD RELEVANT OBJECTIVES, ALL STUDENTS IN ALL COLLEGES COMBINED

IHE press

	Ad	Ac	St	Tot	Average
Objective 1	.19	.29	.29	.31	.27
4	.21	.26	.32	.33	.28
10	.20	.26	.32	.32	.28
Average	.20	.27	.31	.32	

W press

	Ad	Ac	St	Tot	Average
Objective 5	.20	.22	.22	.27	.23
7	.19	.22	.23	.26	.23
Average	.20	.22	.23	.27	

SI press

	Ad	Ac	St	Tot	Average
Objective 3	.00	.23	.14	.18	.18
8	.05	.18	.16	.19	.15
11	.04	.18	.26	.23	.18
Average	.03	.20	.19	.20	

PS press

	Ad	Ac	St	Tot	Average
Objective 2	.12	.14	.13	.15	.14

	Ad	Ac	St	Tot
Average over nine objectives	.14	.21	.22	.24

TABLE XV-10

CORRELATIONS BETWEEN ENVIRONMENTAL
PRESS AND SATISFACTIONS AND GRADES,
ALL STUDENTS IN ALL COLLEGES COMBINED

	IHE	W	SI	PS
Satisfaction 1	.30	.32	.11	.00
2	.30	.29	.11	-.05
3	.18	.23	.00	.03
Grades	-.02	-.05	-.01	-.10
Average r with Satisfactions	.26	.28	.07	-.01

Swarthmore. To test this supposition, the range of CCA mean scores for all similar subgroups across all colleges was compared with the range of composite mean scores across all colleges. If subgroups of a common type tend to be more like one another than like the colleges in which they are located, the differences between these common types of subgroups should be smaller than the differences between the colleges. In no case, however, was this true. Comparisons were made for all physical science groups, all biology and chemistry groups, all English, language, and literature groups, all social science groups, and all art, music, drama, and speech groups. In each set of comparisons, the range of mean scores across the presumably common type of subculture was almost identical with the range of mean scores across the colleges in general. In other words, science at San Jose is as different from science at Swarthmore as San Jose itself is different from Swarthmore. Differences in the press of similar subgroups are just as great as differences between the institutions.

The second and last analysis points to a similar conclusion about the importance of the environment as a whole. Students' estimates of progress toward the attainment of various goals is definitely related to the total press of the institution. Each of the nine colleges was arranged in rank order according to the total IHE press. And then each of the nine colleges was arranged in rank order according to the students' ratings of progress toward the three objectives relevant to the IHE press. The correlation between the two rankings was .90. In colleges that have the strongest intellectual, humanistic, esthetic atmosphere the students also make the most progress toward a broad cultural and literary education, understanding different philosophies and ways of life, and an appreciation and enjoyment of art, music, and literature. The rank order correlation between Scientific, Independent press and progress toward objectives relevant to it was .65. For the Friendly, Group Welfare emphasis and its related objectives, the rank correlation was .57. And for the Practical, Status-oriented emphasis and its relevant objective, the rank correlation was .28. Except for this last correlation, which is not significantly larger than chance, the relationships are clearly significant and in one case clearly substantial as well.

In the beginning of this report it was suggested that the theory of "mass action," which grew out of physiological research some 35 years ago, might well fit the present state of affairs in educational research. Most studies of the impact of higher education on students have dealt with stimuli (conditions, events, programs, etc.) that are relatively small and limited when judged against the total mass of stimuli in a four-year college experience.

It is not surprising that the influence of these limited stimuli is also limited. What has been done in the present research is to regard the total college environment as the stimulus, a kind of mass action upon the potential achievements and satisfactions of the students. Then this total stimulus has been broken into somewhat smaller segments, representing particular academic fields and particular circles of friends, to investigate what differential influences might be attributed to these subenvironments. At the same time, characteristics of the students themselves have been investigated because it may well be that nature rather than nurture is the primary influence upon college attainment and satisfaction. The results of these studies lend considerable support to this mass action concept of educational impact.

As one moves from the total environment to major subcultures within it, and then to particular aspects of these subcultures, one finds that the relationships between environment and attainment are progressively smaller. The greatest impact is from the largest mass. The clearest differences in stimuli are those between the total environments of different colleges; and correspondingly, the clearest relationships between environment and attainment are those between the different colleges as a whole. Within the colleges, there are deviant subenvironments. Again at this level it is the total press of the subculture rather than the press of any one aspect of it that has the higher relationship to students' attainment of relevant objectives. Moreover, common types of subcultures differ from one another across colleges to as great a degree as the colleges themselves differ, indicating that the impact of a subculture depends more upon the college in which it is located than upon its presumed similarity to others of its kind.

In small colleges there are few differentiated subcultures. In more complex colleges the number is greater. Not only does one find environmental differences but one also finds a roughly paralleled distribution of like-minded students into the different subcultures. Where the characteristics of students and of subcultures are similar, or congruent, their combined mass influence on achievement is greater than the influence of either factor alone. When these factors are not congruent, achievement of relevant objectives is a little more frequently consistent with the press of the environment than with the personality of the students.

Just as a better distribution of students into different colleges on a national scale would probably result in fewer dropouts, fewer transfers, and more graduates, so also a better distribution of students into various subenvironments within colleges would probably result in greater progress toward the attainment of relevant goals by a greater number of students. The more massive and more cumulative and more congruent the stimuli are, the greater is the impact they have upon the students.

THE COLLEGE CHARACTERISTICS ANALYSIS: PRELIMINARY COMMENTS

Contents:

The study of college environments

Purposes of the College Characteristics Analysis

Relationships between the CCA and the CCI

Development of the CCA

Scoring key and instructions

Suggested patterns of analysis

Prepared at:

The Center for Advanced Study in the Behavioral Sciences

by: C. Robert Pace

August 1960

THE STUDY OF COLLEGE ENVIRONMENTS

In recent years a growing number of behavioral scientists have turned their attention to the college environment as an object of research and to the changes which take place in students under the impact of college experience. The experimental instrument described here is one example of this interest and one device for analyzing the dynamics of college environments.

Over the past four years George G. Stern and the writer have collaborated on the construction of the College Characteristics Index and the joint direction of research based upon its use. The new instrument owes much to this collaborative experience and, in many ways, may be regarded as a supplementary or complementary device--structurally different and designed to serve different purposes, but nonetheless directed toward the general problem of understanding college environments.

The development of this new instrument was encouraged and supported by a grant to the writer from the Social Science Research Council. It is hoped that it will find a useful place in institutional self-studies, and in many practical and research enterprises where a tool for analyzing the internal structure and impact of college environments is needed.

In a complex college or university there are many environments. The environment of the sociology department is different from that of the chemistry department, for example; and so in other academic fields or groupings there are differences--between engineering, education, home economics, business, liberal arts, etc. Although each major division or department is part of the total university environment, and shares some characteristics in common with the totality, each also possesses some distinctiveness.

The student in a complex college or university is aware of, and responds to, various characteristics of the total environment in which he lives. Often, however, he may be more clearly aware of, and more strongly influenced by, the characteristics of the particular parts of the total environment with which he most closely identifies--his major field or division, and his student friends, rather than the academic program in general or the students in general.

PURPOSES OF THE COLLEGE CHARACTERISTICS ANALYSIS

The first purpose of the College Characteristics Analysis (CCA) is to enable students to report what, in their experience and opinion is or is not true about the particular part of the university they know best--their own academic field or area, and the students they associate with most commonly and closely. Thus, the CCA is a tool with which the characteristics of subcultures within the university can be estimated, and the differences between subcultures can be compared. These subcultures are of two kinds--academic and student. The CCA, then, attempts to identify, analyze, and compare the pattern of subcultures within a complex college or university.

A second and equally important purpose of the CCA is to provide a way of estimating the extent to which the different major parts of the environment operate in harmony or at cross-purposes. How this purpose is accomplished can best be explained by reference to the table on the next page. The content of the items in the CCA is organized along two dimensions. The first dimension refers to the goals, objectives, or major emphases of the environment. Goals of higher education are grouped under four broad categories: the first two are strongly intellectual, involving an interest in ideas as ideas and a primary emphasis on academic achievement, but with one more explicitly directed toward humanism and the other more explicitly directed toward scientism; the third goal encompasses important practical and vocational objectives, and involves an interest in skills, and in external rewards and personal status; the fourth goal is concerned with those objectives which emphasize human relations, group welfare, citizenship, and social responsibility. The second major dimension along which the items are located refers to the major parts of the college or university community--the administrative community of the college or university as a whole, with its rules and procedures, the facilities and equipment provided, and various special features which transcend departmental or divisional boundaries; the academic community which refers to the faculty, curriculum, and instruction in the various major areas; and the student community which refers to student characteristics, extracurricular programs, and informal student activities.

With this twofold classification system, one can make a diagnostic evaluation of the college environment. For example, is the emphasis in the administrative community consistent with the emphasis in the academic community? Is the student community supportive of or at odds with the objectives of the academic community? Where does most of the support come for the major goals of the institution? Moreover, since the reports of the students can be grouped according to major academic areas and according to major student associations, one can identify and evaluate the role of these finer subdivisions in relation to the objectives of the institution.

The essential feature of the College Characteristics Analysis is in the word analysis. It is analytic of the relative emphasis within the institution given to different goals of higher education, and it is analytic of the major internal sources of support in relation to each of the major goals. Its purpose is internal diagnosis of the role of major subcultures in the environment of complex colleges and universities.

RELATIONSHIPS BETWEEN THE CCA AND THE CCI

The College Characteristics Index (CCI) was developed by George Stern and the writer and was designed as a companion instrument to the Activities Index (AI) which had been previously developed by George Stern. The AI is a personality test, consisting of 300 items, organized into 30 ten-item scales measuring various personality needs--Dominance, Nurturance, Achievement, Understanding, Play, etc.--selected from Henry Murray's classification of personality needs. The CCI also consists of 300 items, organized into 30 ten-item scales which have the same labels as the needs scales in

CLASSIFICATION OF ITEMS IN THE COLLEGE CHARACTERISTICS ANALYSIS

Major goals, objectives, or emphases of the college environment

Major parts of the college or university community	Humanistic intellectual reflective	Scientific intellectual competitive	Practical vocational status-oriented	Welfare citizenship social responsibility	Totals
The Administrative Community:	15	15	15	15	60
Rules and procedures	(5)	(5)	(5)	(5)	(20)
Facilities	(5)	(5)	(5)	(5)	(20)
Special features	(5)	(5)	(5)	(5)	(20)
The Academic Community:	15	15	15	15	60
Faculty	(5)	(5)	(5)	(5)	(20)
Curriculum	(5)	(5)	(5)	(5)	(20)
Instruction	(5)	(5)	(5)	(5)	(20)
The Student Community:	15	15	15	15	60
Student characteristics	(5)	(5)	(5)	(5)	(20)
Extra-curricular programs	(5)	(5)	(5)	(5)	(20)
Informal student activities	(5)	(5)	(5)	(5)	(20)
Totals	45	45	45	45	180

the AI; but the CCI scales are intended as estimates of environmental press. Press is defined as something in the environment which would be satisfying or frustrating to a personality need. For example, a person with a high need for order would find an orderly environment satisfying--and order in a college environment might be exemplified by such features as having assigned seats in class, taking attendance, etc. Thus, in writing items for the CCI, the authors intended each press scale to be a counterpart to a corresponding need scale. This need-press parallelism is the unique feature of the CCI.

There is no explicit need-press parallelism in the CCA. The model for the CCA consisted of major objectives on the one hand (i.e., emphasis toward Humanism, Scientism, Practicality, and Welfare), and major parts of the environment on the other (i.e., Administrative, Academic, and Student). Conceptually, therefore, the CCA is different from the CCI.

Other differences between the CCA and the CCI relate to purposes. The CCI is concerned with the environment-as-a-whole, and is used to study differences between colleges. The CCA is concerned with parts of the total environment, and is designed for the study of subcultures within a college or university. The CCI, with its need-press parallelism, is especially suited to the study of college student-college environment interaction, and thus has a unique contribution to make to the general psychological problem of the relationship between person and environment. The CCA, with its emphasis on objectives and with its division of the environment into various parts, is especially suited to the study of institutional dynamics, and thus to the general problem of analyzing institutional effectiveness.

Along with these intentional differences in conceptualization, structure, and purposes, between the CCA and the CCI, there are also intentional similarities. Ideas for the CCA came in part from the writer's experience with, reflections on, and analyses of, the CCI. And, 50 percent of the items used verbatim in the CCA were originally composed by George Stern and the writer for use in the CCI. There is an intentional bridge between the two instruments so that they can be used in complementary fashion: the CCI for the environment as a whole and for comparisons between institutions, and the CCA for subcultures within complex institutions. Each provides a different kind of information, but both are concerned with characteristics of college environments.

DEVELOPMENT OF THE COLLEGE CHARACTERISTICS ANALYSIS

Having decided on the general structure and purposes of the CCA, the writer turned to the CCI to look for previously used items which might fit into the new test blueprint. Over a period of four years, from 1956 to 1960, George Stern and the writer had constructed three editions of the CCI and had, as part of a jointly directed research program, selected a norm group of 32 colleges and universities from which standard scores on the CCI scales (Form 1158) were developed. During the year 1959-60, at the Center for Advanced Study in the Behavioral Sciences, the writer and Anne McFee carried out a number of statistical analyses of the data from this norm group of 32 institutions. These are listed briefly: 1) a centroid factor analysis of the 30 CCI test variables, 2) a centroid factor analysis of the rank order correlations between all pairs of the 32 institutions, 3) a study of the variance of scores on the CCI scales, 4) the development of item discrimination statistics showing the differences in item responses between schools which were high and schools which were low on the scale in which the item occurred and on broader clusters of scales which had been identified from the factor analysis of test variables.

It was previously noted that one dimension in the test blueprint for the CCA was a classification of familiar parts of the college environment --curriculum, teaching, facilities, etc. At an early state in developing the new test all the items in the present CCI were classified according to these categories. The results of this classification are summarized below:

	Percent of CCI items in each category	
Administrative community		
Rules and procedures	6	24%
Facilities	4	
Special features	14	
Academic community		
Faculty	8	27%
Curriculum	6	
Instruction	13	
Student community		
Student characteristics	24	45%
Extracurricular programs	9	
Informal student activities	12	
(Unclassified)	4	
	100	

It is obvious that the content or reference of CCI items is fairly well spread over all the categories; but it is also obvious that some categories are much more heavily represented than others. Indeed, the single category of "student characteristics" has nearly twice as many items as the next largest category and six times as many as the least represented category. Clearly, then, a test which would be analytical with respect to different parts of the college environment would require many new items as well as the elimination of many existing CCI items.

Since the other dimension of the CCA was concerned with major objectives of higher education, it was evident that many of the CCI variables, which take their content from personality theory, would not be relevant. Such variables as understanding, reflectiveness, objectivity, etc., are clearly relevant to objectives of higher education; but such variables as narcissism, exhibitionism, harm avoidance, etc., are more difficult to conceive as objectives of higher education. From the factor analysis of CCI variables it was found that several broad groupings could be identified which, with some reworking seemed to parallel rather well recognized patterns or types of emphasis in higher education: the intellectual humanistic emphasis, the intellectual scientific emphasis, the practical applied emphasis, and the welfare or citizenship emphasis. Only those items from the CCI which fit under one of these four emphases were considered for inclusion in the CCA.

On a somewhat more technical level, two other criteria had to be met in selecting items from the CCI for inclusion in the CCA. First, many of the items must be worded (or reworded) in such a way as to make them answerable with reference to subcultures rather than with reference to the college as a whole; and second, the items must be ones on which a clear difference in response occurred when schools which were high on the relevant cluster or emphasis were compared with schools which were low in that general emphasis. Using these two criteria, there were 90 out of the 300 items in the CCI which could be included intact in the CCA, plus an additional 35 items which could be included after being rewritten. The discrimination values of these 90 items are shown in the table on the next page. For all except two items, 95 percent, the difference between the average response at high versus low colleges was 20 points or more. For 64 percent of the items, the difference between the average response at high versus low colleges was 30 points or more. And for 30 percent of the items, the discrimination value was 40 points or more. On the average the items selected for inclusion in the CCA were ones on which the typical difference between the response of high versus low colleges was approximately 34 percentage points.

Since the CCA has just been prepared for experimental use, no data are available concerning the reliability of scores on the various scales. Two comments are pertinent, however, growing out of previous analyses of the CCI. It was found that the variance of scores on the CCI scales was directly related to the size of the college being described--the larger the college the greater the variability of students' responses. In the larger colleges and universities students disagree more about what is or is not true of the environment. It was also found that items which referred to conditions which students were least likely to know about produced more disagreement in responses than items dealing with conditions that were more likely to have been encountered. In answering the CCI and the CCA, students act as reporters. Reliability, in this context, can be defined as agreement among reporters. On the 10-item scales in the CCI the variance of scores within single institutions has ranged from as low as .39 to as high as 7.58. It seems likely that students will be more familiar with conditions in their major field than conditions in the university in general, and more familiar with their student friends than with students in general. These conditions should produce greater agreement in

Discrimination Values of Items from the CCI

Selected for Inclusion without Change in the CCA

Percentage difference between high and low colleges	Number of items under each objective					
	Scientific	Humanistic	Practical	Welfare	Total	Cumulative Percent
70			1		1	1
60	1				1	2
50	1	1	2	1	5	8
40	2	5	10	3	20	30
30	9	11	4	7	31	64
20	7	7	9	7	30	98
10	1		1		2	100
Totals	21	24	27	18	90	
(Total number of items in CCA)	45	45	45	45	180	

their reports, hence higher reliability. Since the length of a test also contributes to its reliability, the greater length of scales in the CCA (45 items for each major objective, and 15 items for each area within each objective, as compared with 10 item scales in the CCI) should result in good reliability.

The basic design of the CCA consists of the four major emphases or objectives which have been described, each measured by a 45-item scale. In this first experimental edition, however, two 15-item scales have been added. Both of these refer to characteristics of the student community only, and for obvious reasons. One deals with indications of rebelliousness and the other deals with indications of playfulness. Neither of these topics can be regarded as reflecting objectives of higher education, but it seemed useful to include them experimentally for the additional light they might throw on characteristics of the student community. All of the items used in the playfulness scale were taken from the CCI, although some are scored differently in the new scale, and only four of the items come from the CCI scale which is labeled Play. In the rebelliousness scale there are two new items, five old ones from the CCI which were rewritten, and eight old ones used intact from the CCI.

SCORING KEY AND INSTRUCTIONS

Directions for students filling out the CCA are printed in the test booklet.

The scoring key is reproduced in the next page. It is suggested that the test be scored in groups of 15-item blocks. There is a place on the answer sheet to record the total number of "correct" responses to each 15-item block. In addition there is a space to add the scores into larger 45-item blocks, corresponding to the four major objectives or emphases measured by the test. There is of course no right or wrong answer to any question. The "correct" answer is merely the response which is consistent with the objective being measured.

In most cases, scoring the CCA can probably be done most conveniently by hand. It should easily be possible for a clerk, using a simple stencil laid over the answer sheet, to score a paper in a minute or less, so that 300 to 400 papers could be scored in one day. Even a large university which wished to have CCA reports from as many as 50 students from each of its major academic subdivisions could accomplish the scoring of the answer sheets in one day with two clerks. In many complex colleges and universities the number of CCA reports needed for an analysis of the major subcultures will probably range from 100 to 250 (this would assume 25 reports from each of 4 to 10 major subcultures).

In the absence of experience with the test, no empirically validated advice can be given as to the number of students who should be asked to fill out the CCA in a particular school. Experience with the CCI, however, indicates that a relatively small number of students (25-30) will provide

COLLEGE CHARACTERISTICS ANALYSES

SCORING KEY

The Administrative Community				The Academic Community				The Student Community					
H	W	S	P	H	W	S	P	H	W	S	P	Reb	Ply
1 T	16 T	31 F	46 T	61 T	76 T	91 T	106 T	121 T	136 T	151 T	166 T	181 F	196 T
2 T	17 F	32 T	47 F	62 T	77 T	92 T	107 T	122 T	137 T	152 T	167 T	182 T	197 T
3 T	18 T	33 T	48 T	63 F	78 T	93 F	108 T	123 T	138 T	153 T	168 T	183 F	198 T
4 F	19 T	34 F	49 T	64 T	49 T	94 T	109 T	124 T	139 T	154 F	169 T	184 T	199 T
5 T	20 T	35 F	50 T	65 T	80 T	95 T	110 T	125 T	140 T	155 T	170 T	185 F	200 T
6 T	21 T	36 T	51 T	66 T	81 T	96 F	111 T	126 T	141 T	156 T	171 T	186 T	201 T
7 T	22 T	37 T	52 T	67 T	82 T	97 T	112 T	127 F	142 T	157 T	172 T	187 F	202 T
8 T	23 T	38 T	53 T	68 T	83 T	98 T	113 T	128 F	143 T	158 T	173 T	188 T	203 T
9 T	24 T	39 F	54 T	69 F	84 T	99 F	114 T	129 T	144 T	159 T	174 T	189 T	204 T
10 T	25 T	40 F	55 T	70 T	85 T	100 T	115 T	130 T	145 T	160 F	175 T	190 T	205 T
11 T	26 T	41 T	56 T	71 T	86 T	101 T	116 T	131 T	146 T	161 T	176 T	191 T	206 T
12 F	27 T	42 F	57 T	72 T	87 T	102 F	117 T	132 T	147 T	162 F	177 T	192 T	207 T
13 T	28 T	43 T	58 F	73 T	88 T	103 T	118 T	133 T	148 F	163 T	178 T	193 F	208 F
14 T	29 T	44 T	59 F	74 T	89 T	104 T	119 T	134 T	149 T	164 T	179 T	194 T	209 T
15 T	30 T	45 T	60 T	75 T	90 T	105 F	120 T	135 T	150 T	165 T	180 T	195 T	210 T

Total score for H (Humanistic, intellectual emphasis) = 1-15+61-75+121-135
Total score for W (Welfare, citizenship emphasis) = 16-30+76-90+135-150
Total score for S (Scientific, intellectual emphasis) = 31-45+91-105+151-165
Total score for P (Practical, vocational, status emphasis) = 46-60+106-120+166-180

a composite report on the characteristics of a medium-sized institution which does not differ greatly from the composite report given by a much larger number. Typically, the students who fill out the CCI (or who would fill out the CCA) are selected from the Junior or Senior class, on the grounds that they have lived three to four years in the college environment and are better qualified to say what is true or not true about it than Freshmen or Sophomores would be. It is important to keep in mind also that the students are not describing their own individual or unique experience but rather are serving as reporters about conditions which are in many cases publicly observable or generally shared. Moreover, in the CCA they are reporting about the parts of the environment they know best. For all these reasons, the writer is prepared to suggest that 20 or so reporters may be enough for smaller subcultures (such as a Music Department with 50 upperclassmen) and that 50 or so reporters may be enough for larger subcultures (such as a School of Business with 300 upperclassmen).

SUGGESTED PATTERNS OF ANALYSIS

Again, because the test has not yet been used in any college at the time of writing these comments, there are no norms and no experience to draw on in suggesting precisely how scores should be interpreted or the data for a given institution put together in the most helpful manner.

Answers to such questions as "what is a high score?" or "what is an average score?" can only be guessed. For the 15-item scales the middle score is 8. For the 45-item scales the middle score is 23. There is some basis for guessing that the actual median scores will be fairly close to these middle points. For example, the approximate average percent of agreement with the key for the 90 CCI items used in the CCA was as follows:

	Humanistic	Welfare	Scientific	Practical
Administrative area	60	57	49	44
Academic area	64	63	56	48
Student area	56	62	53	45
Average	60	61	53	46

Thus, assuming that new CCA items are of about the same average difficulty as the above, the estimated average scores on the various CCA scales would be approximately as follows:

	Humanistic	Welfare	Scientific	Practical
Administrative area	9.0	8.6	7.4	6.6
Academic area	9.6	9.4	8.4	7.2
Student area	8.4	9.3	8.0	6.8
Total scale	27.0	27.4	23.9	20.7

Experience with the CCA will show whether these estimates are reasonably correct. Meanwhile, they can be used as rough guide lines, suggesting that average scores for the "humanistic" and "welfare" objectives may run a little higher than the arithmetic middle of the scale, and that average scores for the "practical" objectives may run a little lower than the arithmetic middle of the scale.

On the next page is illustrated one simple way of recording and summarizing the scores. The illustration assumes a moderately complex college, having three broad parts in its liberal arts program (science, humanities, and social sciences), plus two professionally oriented programs, one in Business and one in Education. The results are then recorded for each of these five major academic areas. Then, to see more clearly the differences between the various areas, each group is compared with the college average. From the imaginary data shown in the tables, one might note that the college environment tends to emphasize practical objectives, that this emphasis is especially strong in Business and Education and Social Sciences, and that along with this emphasis there tends also to be a stress on the welfare objectives. By and large, the student life described by students in these academic fields is supportive of these same objectives. The science field is least supportive of welfare objectives. The Business field is least supportive of science objectives. And so, one can inspect any given set of data in some such fashion as this, looking for patterns of similarity and difference between the various subcultures.

On the reverse side of the answer sheet, there is a brief questionnaire, dealing with progress toward various objectives, participation in extracurricular activities, and satisfactions with college life. The check list of extracurricular activities can be used to sort out various student subcultures. For example, one can group together all students who are involved in sports and compare their responses with those of all students who are involved in publications or student government, etc. The questions dealing with objectives and satisfactions can be used as criteria. For example, do students in a particular field, such as Business, believe they have made considerable progress toward vocationally relevant objectives and, in turn, express a high level of satisfaction with their college experience? Finally, it must be noted, these comments are merely suggestive of patterns of analysis which might be made.

The CCA is available only for experimental use. Its subsequent revision and availability for wider use will depend on the value which can be ascribed to it as a result of its experimental application.

Imaginary Mean Scores of Academic Subcultures in a Hypothetical College

	Business				Education				LA Sciences				LA Humanities				LA Social Sciences				Total College Averages			
	H	W	S	P	H	W	S	P	H	W	S	P	H	W	S	P	H	W	S	P	H	W	S	P
Adm.	6	8	4	12	7	8	4	11	6	6	6	10	8	8	5	10	8	9	5	11	7	7	5	11
Acad.	5	11	4	13	8	12	6	12	8	5	11	10	13	8	8	9	10	12	7	11	9	10	7	11
Stud.	4	9	3	13	7	12	4	13	7	5	10	10	9	9	8	9	8	12	6	11	7	9	8	11
Total	15	28	11	38	22	32	14	36	21	16	27	30	30	25	21	28	26	33	18	33	23	26	20	33

Differences Between Each Academic Group and the College Average

	Business				Education				LA Sciences				LA Humanities				LA Social Sciences			
	H	W	S	P	H	W	S	P	H	W	S	P	H	W	S	P	H	W	S	P
Adm.	-1	+1	-1	+1	0	+1	-1	0	-1	-1	+1	-1	+1	+1	0	-1	+1	+2	0	0
Acad.	-4	+1	-3	+2	-1	+2	-1	+1	-1	-5	+4	-1	+4	-2	+1	-2	+1	+2	0	0
Stud.	-3	0	-5	+2	0	+3	-4	+2	0	-4	+2	-1	+2	0	0	-2	+1	+3	-2	0
Total Diff.	-8	+2	-9	+5	-1	+6	-6	+3	-2	-10	+7	-3	+7	-1	+1	-5	+3	+7	-2	0

COLLEGE CHARACTERISTICS ANALYSIS

First Experimental Edition

August 1960

The CCA was designed and constructed by C. ROBERT PACE, with the assistance of ANNE MC FEE, at the Center for Advanced Study in the Behavioral Sciences. It is related to, and based partly on an analysis and selection of items from, the COLLEGE CHARACTERISTICS INDEX (CCI) developed by GEORGE G. STERN and C. ROBERT PACE, at Syracuse University.

DIRECTIONS

There are 210 statements about college life in this booklet. Some of them refer to the college or university as a whole. Some refer to your major field. And some refer to your student colleagues. They are arranged in three parts.

PART I. The College or University as a Whole

Statements 1-60 refer to the college or university as a whole—that is, to the institution in general. The statements are about rules and regulations, procedures and policies, facilities and services, and special or general features of the institution. The statements may or may not be characteristic of your college, because colleges differ from one another in many ways. You are to decide which statements are generally true or characteristic of your college and which are not.

PART II. Your Major Academic Field

Statements 61-120 refer to your major academic field. This means the academic part of the college or university with which you identify—such as Engineering, Business, Education, Home Economics, Literature, Science, Social Sciences, Languages, Music, etc. On the answer sheet there is a space for you to write the name of your major field or school. The statements in this section are about professors, classes, teaching, etc. You are to decide which statements are generally true or characteristic or the way things are in your major field, and which are not. This may or may not be the way things are in other parts of the college or university.

PART III. Your Student Colleagues

Statements 121-210 refer to student characteristics, extracurricular activities, and informal student life. Your answers should tell us what is generally characteristic of the students you know best, identify with, or associate with most commonly, and of the extracurricular and informal activities you know about because you or your student friends are or have been involved in them. Your answers should refer to your student colleagues; they may or may not be true for students in general or for other groups of students.

On the special answer sheet, as you read each statement in the booklet, blacken space

T—when you think the statement is generally TRUE or characteristic, is something which exists or occurs or might occur, is the way people tend to feel or act;

F—when you think the statement is generally FALSE or not characteristic, is something which does not exist or occur or is not likely to occur, or is not the way people typically feel or act.

YOU MUST ANSWER EVERY ITEM

Work rapidly, going through the entire list of statements. Please do not make any marks in this booklet.

When you have finished answering the statements, turn the ANSWER SHEET over and reply to the short questionnaire on the reverse side.

* * *

PART I. COLLEGE OR UNIVERSITY AS A WHOLE

T—generally TRUE or characteristic of your college
F—generally FALSE or not characteristic of your college

1. Students are allowed to help themselves to books in the library stacks.
2. There is a theater on or near the campus specializing in foreign films.
3. The school has an excellent reputation for academic freedom.
4. Saturday classes are sometimes dismissed for a big student celebration.
5. The campus architecture and landscaping provide many quiet and attractive places for study or conversation.

6. The values most stressed here are open-mindedness and objectivity.
7. Science labs, music rooms, art studios, etc., are often open evenings and week ends.
8. There are paintings or statues of nudes on the campus.
9. No one needs to be afraid of expressing extreme or unpopular viewpoints in this school.
10. There are regular faculty-student committees for considering educational policies.

11. The library is one of the best facilities on campus.
12. This is mainly a meat and potatoes community, with little interest in gourmets or anything unusual.
13. Students are free to cut classes at their own discretion.
14. There are many facilities and opportunities for individual creative activity.
15. The school is outstanding for the emphasis and support it gives to pure scholarship and basic research.

16. Fire drills are held in student dormitories and residences.
17. Most students eat in large cafeterias.
18. The college regards training people for service to the community as one of its major responsibilities.
19. Students are frequently reminded to take preventive measures against illness.
20. The Chapel is the traditional center of the campus.

21. The school helps everyone get acquainted.
22. All undergraduates must live in university approved housing.
23. Counseling and guidance services are friendly and effective.
24. Proper social forms and manners are important here.
25. The student government has a responsible role in regulating student behavior.

26. Rooms are available for student clubs and other organizations.
27. Students here learn that they are not only expected to develop ideals but also to express them in action.
28. Students are not allowed to attend classes in Bermuda shorts, bare feet, etc.
29. Dormitories are nicely arranged for small informal gatherings.
30. Students who are not properly groomed are likely to have this called to their attention.

31. Students' mid-term and final grades are reported to parents.
32. Some of the new buildings on the campus exemplify the best in modern architecture.
33. Graduation is a pretty matter-of-fact, unemotional event.
34. Students must have a written excuse for absence from class.
35. Campus architecture and landscaping stress symmetry and order.

36. There is a lot of interest in the philosophy and methods of science.
37. Students who don't make passing grades are quickly dropped from school.
38. Science lecture rooms are well equipped for demonstrations.
39. The history and traditions of the college are strongly emphasized.
40. Student organizations are closely supervised to guard against mistakes.

41. Laboratory facilities in the natural sciences are excellent.
42. Students quickly learn what is done and not done on this campus.
43. Students are expected to work out the details of their own program in their own way.
44. Movies, film strips, slides, etc., are commonly used in science classes.
45. Students here are encouraged to be independent and individualistic.

46. Resident students must get written permission to be away from the campus over night.
47. There are no mirrors in any of the public rooms or halls.
48. This school is regarded as a good place to meet future business or marriage partners.
49. The student leaders are entitled to certain special privileges.
50. Newer buildings on the campus are in the same style as the older buildings.

51. There is a lot of apple-polishing around here.
52. Student organizations are required to have a faculty adviser.
53. Athletic facilities are modern and well equipped.

54. The important people at this school expect others to show proper respect for them.
55. Student organizations must get administrative approval to take a stand on controversial issues.

56. There is a well-organized and effective job placement office for the graduating students.
57. There is a lot of fanfare and pageantry in many of the college events.
58. Students are encouraged to criticize administrative policies and teaching practices.
59. There are no fraternities or sororities.
60. Anyone who knows the right people in the faculty or administration can get a better break here.

* * *

PART II. YOUR MAJOR ACADEMIC FIELD

T—generally TRUE or characteristic of your major field
F—generally FALSE or not characteristic of your major field

61. Many of the professors are actively engaged in writing.
62. Students may be excused from regular course or departmental requirements to follow an approved program of independent study.
63. Many lectures are delivered in a monotone with little inflection or emphasis.
64. Most of the professors are dedicated scholars in their fields.
65. There are good opportunities for students to study and criticize important works in art, music, and drama.

66. Most courses require intensive study and preparation out of class.
67. Faculty members put a lot of energy and enthusiasm into their teaching.
68. There is a lot of emphasis on preparing for graduate work.
69. In papers and reports, vivid and novel expressions are usually criticized.
70. The professors really push the students' capacities to the limit.

71. In many courses the broad social and historical setting of the material is discussed.
72. Class discussions are typically vigorous and intense.
73. Most of the professors are very thorough teachers and really probe into the fundamentals of their subjects.
74. Most courses are a real intellectual challenge.
75. On nice days many classes meet outdoors on the lawn.

76. Students often run errands or do other personal services for the faculty.
77. Many courses are designed to prepare students for well-informed citizenship.
78. In some classes term papers or oral reports are assigned to committees or small groups.
79. Students often see and talk with the professors outside of class.
80. The goals and purposes of most courses are clearly explained.

81. Professors will often increase a student's grade if they think he has worked especially hard and conscientiously.
82. Many faculty members are active in community work—churches, charities, schools, service clubs, etc.
83. There are courses which involve field trips to slum areas, welfare agencies, or similar contacts with underprivileged people.
84. It is easy to take clear notes in most courses.
85. Faculty members often call students by their first names.

86. Education for leadership is strongly emphasized.
87. In some classes students and instructors consider co-operatively the choice of readings and discussion topics.
88. The professors go out of their way to help you.
89. A strong sense of responsibility about one's role in the contemporary social and political life is stressed in many courses.
90. Students who are having difficulty in a course are encouraged to talk with the professor about it.

91. Quite a few faculty members have had varied and unusual careers.
92. Research methods are emphasized in many courses.
93. Classes meet only at their regularly scheduled time and place.
94. Faculty members are typically scientific and objective in their approach to problems.
95. To complete requirements, most students have to start work in their major field as Freshmen.

96. In many classes students have an assigned seat.
97. Faculty members encourage students to work on research projects.
98. Accelerated or honors programs are available for qualified students.
99. The professors regularly check up on the students to make sure that assignments are being carried out properly and on time.
100. Many of the professors are actively engaged in research.

101. In many courses students carry out experiments and interpret the data.
102. Frequent tests are given in most courses.
103. The faculty encourage students to think about exciting and unusual careers.
104. Many courses are designed to prepare experts in the discipline, and future researchers.
105. Professors usually take attendance in class.

106. Faculty members always wear coats and ties on the campus.
107. The vocational value of many courses is emphasized.
108. Students almost always wait to be called on before speaking in class.
109. Many faculty members are involved in services or consulting activities for outside groups, businesses, adult education, etc.
110. Everyone knows the "snap" courses to take and the tough ones to avoid.

111. In many courses grade lists are publicly posted.
112. In talking with students, faculty members seldom or never refer to their colleagues by their first names.
113. There are many really practical courses available to students, such as typing, report writing, etc.
114. It is fairly easy to pass most course without working very hard.
115. Some of the professors react to questions in class as if the students were criticizing them personally.

116. Many courses stress the concrete and tangible rather than the speculative or abstract.
117. Personality, pull, and bluff get students through many courses.
118. Students address faculty members as "professor" or "doctor."
119. The academic atmosphere is practical, emphasizing efficiency and usefulness.
120. Learning what is in the textbook is enough to pass most courses.

* * *

PART III. YOUR STUDENT COLLEAGUES

T—generally TRUE or characteristic of your student colleagues
F—generally FALSE or not characteristic of your student colleagues

121. Student rooms are more likely to be decorated with paintings, carvings, mobiles, fabrics, etc., than with pennants and pin-ups.
122. Many students belong to departmental clubs: French club, Philosophy club, Math club, etc.
123. Long, serious, intellectual discussions are common among the students.
124. Students put a lot of energy into everything they do—in class and out.
125. Stories in the college literary magazine are often widely discussed.

126. There are so many things to do here that students are busy all the time.
127. To most students art is something to be studied rather than felt.
128. Most students have very little interest in round tables, panel meetings, or other formal discussions.
129. Books dealing with psychological problems or personal values are widely read and discussed.
130. Students set high standards of achievement for themselves.

131. Many students are attracted to concerts and art exhibits.
132. There is considerable student interest in the analysis of value systems, and the relativity of societies and ethics.
133. Students seem to thrive on difficulty—the tougher things get, the harder they work.
134. Articles in the student newspaper often stimulate discussion of philosophical or ethical matters.
135. There is a lot of student interest in poetry, music, painting, sculpture, architecture, etc.

136. Students commonly share their problems.
137. Student organizations are very open and friendly.
138. Students often have small parties to celebrate pleasant events.
139. Many students are interested in jobs which involve working with people—education, public health, social welfare, etc.
140. Activities in student organizations are carefully and clearly planned.

141. Students rarely get drunk and disorderly.
142. Many students are interested in and give support to such causes as Red Cross, Campus Chest, CARE, or blood banks.
143. Students have helped with a model UN session or political convention within the last year or two.
144. Students frequently attend chapel or religious services on or near the campus.
145. Students have a lot of group spirit.

146. Students have many opportunities to develop skill in organizing and directing the work of others.
147. Students enjoy getting together for bowling, square dancing, card games, etc.
148. The person who is always trying to "help out" is likely to be regarded as a nuisance.
149. Many upperclassmen play an active role in helping new students adjust to campus life.
150. Students often help each other study and review for tests.

151. Students don't care much about the appearance of their rooms.
152. Receptions, teas, or formal dances are seldom attended.
153. Several students construct their own telescopes, hi-fi sets, or collect rocks, plants, etc.
154. Everyone has pretty much the same attitudes, opinions, and beliefs.
155. Bridge tournaments and chess clubs are popular.

156. When students get together they often talk about science.
157. The students represent a great variety in nationality, religion, and social status.
158. Election to a science honorary society is a real mark of distinction.
159. Many students read science fiction books and magazines.
160. The future goals for most students emphasize job security, family happiness, and good citizenship.

161. Feature articles about science in the student newspaper attract considerable interest.
162. Most students dress and act pretty much alike.
163. Many students are planning careers in science.
164. Many parties and meetings get pretty confused.
165. A lot of students like chess, puzzles, double-crostics, and other abstract games.

166. New jokes and gags get around in a hurry.
167. Student elections generate a lot of intense campaigning and strong feeling.
168. There is a lot of informal dating during the week—at the library, snack bar, movies, etc.
169. Students are more interested in specialization than in general liberal education.
170. It's important socially to be in the right club or group.

171. Students spend a lot of time talking about their boy or girl friends.
172. Most students are interested in careers in business, engineering, management, and other practical affairs.
173. For a period of time upperclassmen give orders to freshmen.
174. Nearly everyone here has a date for the week ends.
175. Personal rivalries are fairly common.

176. Every year students help with carnivals, parades, and other festive events on the campus.
177. Students are involved in lots of dances, parties, and social activities.
178. Students think about dressing appropriately and interestingly for different occasions—classes, social events, sports, and other affairs.
179. Students take an extensive part in intramural sports and informal athletic activities.
180. There is very little studying here over the week ends.

181. Students are conscientious about taking good care of school property.
182. It is very difficult to get a group decision here without a lot of argument.
183. Dormitory raids, water fights, and other student pranks would be unthinkable.
184. Students are sometimes noisy and inattentive at concerts or lectures.
185. Students use parliamentary procedures in many of their group meetings.

186. A lot of students will do something even when they know they will be criticized for it.
187. Most students seem to be especially considerate of others.
188. A crowd of boys and girls can always be found at several popular spots.
189. People are always trying to win an argument.
190. Many students seem to expect other people to adapt to them rather than trying to adapt themselves to others.

191. Students often start projects without trying to decide in advance how they will develop or where they may end.
192. Students occasionally plot some sort of escapade or rebellion.
193. Most students show a good deal of caution and self-control in their behavior.
194. Every year a number of students sign petitions to change rules, protest decisions, etc.
195. Students frequently do things on the spur of the moment.

196. Bermuda shorts, pin-up pictures, etc., are common on this campus.
197. There are many opportunities for students to get together in extra-curricular activities.
198. Everyone has a lot of fun at this school.
199. A student who spends most of his time in a science laboratory is likely to be regarded as a little odd.
200. Students frequently go away for football games, skiing week ends, etc.

201. Most students here really enjoy dancing.
202. Students who work hard for high grades are likely to be regarded as odd.
203. The big college events draw a lot of student enthusiasm and support.
204. It's easy to get a group together for card games, singing, going to the movies, etc.
205. Most students are more concerned with the present than the future.

206. Student parties are colorful and lively.
207. Student gathering places are typically active and noisy.
208. Students are very serious and purposeful about their work.
209. A student who insists on analyzing and classifying art and music is likely to be regarded as a little odd.
210. Students spend a lot of time together at the snack bars, taverns, and in one another's rooms.

SAMPLE ANSWER SHEET

COLLEGE CHARACTERISTICS ANALYSIS

NAME __________ DATE __________ AGE _____ SEX _____
Institution __________ School, College, or Division __________
Major Field or Department __________
Check one: CLASS - Freshman ( ), Sophomore ( ), Junior ( ), Senior ( ), Graduate ( )
Check one: Residence - At Home ( ), Dormitory ( ), Fraternity or Sorority ( ), Other University Housing ( ), Other Non-University ( )

Serial _____	Sex _____
Institution _____	Division _____
Major _____	Level _____
Residence _____	_____

In Part II your answers referred to "your major academic field." What was this field? __________

In Part III your answers referred to "your student colleagues." Describe briefly the group you were thinking about when you answered the statements. __________

SCORES

1 _____
2 _____
3 _____
4 _____
5 _____
6 _____
7 _____
8 _____
9 _____
10 _____
11 _____
12 _____
13 _____
14 _____

(1+5+9) _____
(2+6+10) _____
(3+7+11) _____
(4+8+12) _____

COLLEGE EXPERIENCE QUESTIONNAIRE

EDUCATIONAL OBJECTIVES:

For each objective described below, check (x) the degree of progress you feel you have made toward its attainment.

Very much	Quite a bit	Some	Not very much	
___	___	___	___	Acquiring a broad cultural and literary education
___	___	___	___	Vocational training--skills and techniques directly applicable to a job
___	___	___	___	Background and specialization for further education in some professional, scientific, or scholarly field
___	___	___	___	Understanding different philosophies, cultures, and ways of life
___	___	___	___	Social development--gaining experience and skill in relating to other people
___	___	___	___	Personal development--understanding one's abilities and limitations, interests, and standards of behavior
___	___	___	___	Knowing how to participate effectively as a citizen in one's community and in wider areas
___	___	___	___	Developing an ability to think critically and an understanding of the origin, nature, and limitations of knowledge
___	___	___	___	Developing an ability to write, speak, and communicate clearly, correctly and effectively
___	___	___	___	Developing an appreciation and enjoyment of art, music, and literature
___	___	___	___	Developing an understanding and appreciation of science and technology

EXTRA-CURRICULAR ACTIVITIES:

For each type of activity listed below, check (x) the amount of your participation in it.

Much	Moderate	Some	None	
___	___	___	___	Varsity sports
___	___	___	___	Other sports
___	___	___	___	Publications: college paper, etc.
___	___	___	___	Music: chorus, band, etc.
___	___	___	___	Dramatic, debating
___	___	___	___	Student government
___	___	___	___	Religious or service groups
___	___	___	___	Academic clubs, honoraries
___	___	___	___	Social groups: fraternities, etc.
___	___	___	___	Hobby groups
___	___	___	___	Other (please specify)
				______________________
				______________________

SATISFACTIONS:

Check (x) your answer to each of the questions below:

How well do you like your college?

__ Enthusiastic about it
__ Like it
__ Indifferent to it
__ Don't like it

How much of the time do you feel satisfied with your college?

__ Most of the time
__ A good deal of the time
__ About half the time
__ Occasionally or seldom

To what extent have you found groups in the college which were really congenial and with which you felt happy?

__ Very much
__ Quite a bit
__ Somewhat
__ Not very much

What grades have you made in college?

__ Mostly A
__ About half A and B
__ Mostly B
__ About half B and C
__ Mostly C

TECHNICAL NOTE

(Prepared by Leonard Baird)

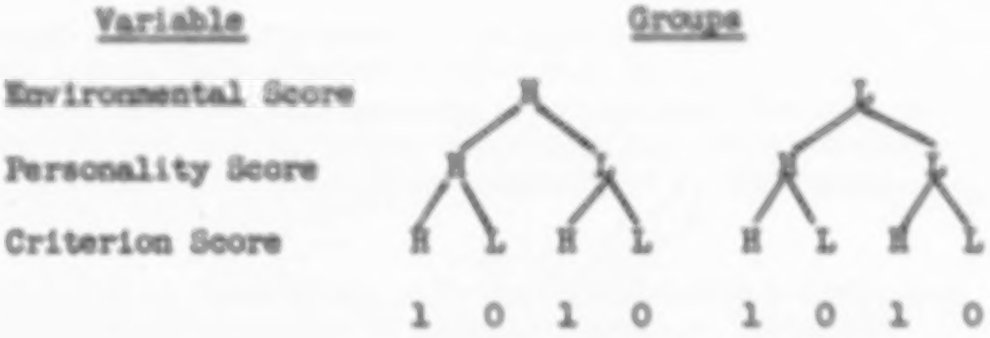
In those colleges where both personality test scores and environmental press scores were available, a number of different methods for analyzing their relationships to students' ratings of progress toward relevant objectives and other criteria were used. The most complex of these methods, which may be described as a pattern analysis, is described below:

1. All students in the college were first divided into two environmental press groups--High and Low. The high group consists of all students who are members of subgroups which had an environmental press score (on a particular CCA scale) higher than the college average. The low group consists of all students in subgroups which had an environmental press score lower than the college average.

2. Within each of these two environmental press groups, the students were further subdivided into two personality groups--High and Low. The high group consists of all students whose score on a particular personality test was higher than the average score for the college. The low group consists of all students whose personality test score was lower than the college average.

3. In each of the four groups thus obtained, the average score on each of the criterion measures (objectives, satisfactions, and grades) was then computed. Each of these means, for each of the groups, was then classified as high or low. This is, above the college average or below the college average.

4. The following diagram illustrates these successive sorting steps:



To avoid confusions from too many H L symbols, the final row of eight cells has been given an alternative set of symbols, so that High = 1 and Low = 0. Basically, we are dealing with four groups of students, and for each group we find out whether their scores are above or below average.

The four groups are these:

a) The "High-High" group--high on both press and personality scales

b) The "High-Low" group--high on the press scale and low on the personality scale

c) The "Low-High" group--low on the press scale and high on the personality scale

d) The "Low-Low" group--low on the press and personality scales

We can designate these groups as HH, HL, LH, and LL.

5. Within any given set of four groups there are 16 conceivable patterns of relationship with the criterion scores. Four of these patterns identify a totally consistent relationship between a press or a personality factor and a criterion score. For example, if the criterion score is high (above average) in the HH group and the HL group, and low (below average) in the LH group and the LL group, the pattern is entirely consistent with the positive emphasis of the press--i.e., the criterion score is always consistent with the press, regardless of whether the personality factor is high or low. If the criterion score is high in the HH group, low in the HL group, high in the LH group, and low in the LL group, the pattern is entirely consistent with the positive emphasis of the personality variable. Each of these two patterns has an opposite, or entirely negative, counterpart.

These four patterns, two positive and two negative, are the only totally consistent patterns among the 14 which can actually be obtained. Conceivably, there are 16 combinations, but two are impossible because one cannot have a combination in which all students are above average, or in which all students are below average.

6. Given these four totally consistent patterns, the task of analysis is simply to determine how often they occur in all of the various comparisons of environmental and personality measures with all of the criterion measures. In the tables where these results are presented, each type of totally consistent pattern is identified by the symbols +, -, N, and O.

+ = totally consistent with an environmental influence
- = totally opposite to an environmental influence
N = totally consistent with a personality influence
O = totally opposite to a personality influence

Only the frequency of these "consistent patterns" is reported in the tables. In summary, the patterns are shown again in the following example:

Totally Consistent Patterns

	+	-	N	0
HH	1	0	1	0
HL	1	0	0	1
LH	0	1	1	0
LL	0	1	0	1
Direction of Relation:	Positive	Negative	Positive	Negative
Related to:	Press		Personality	

7. In presenting these tabulations, each environmental press dimension is compared with all the available personality dimensions. Suppose the personality measures in a particular college are the six scales of the Allport-Vernon-Lindzey Study of Values. The IHE environmental emphasis would then be compared, in turn, with each of these six personality dimensions. Then the W environmental press dimension is compared with each of the six personality dimensions, etc. The number of "+" patterns which result from this comparison indicates how often the IHE press, for example, is positively related to the various criterion measures, regardless of students' scores on any of the six personality measures. The number of "N" patterns indicates how often the criterion measures are positively related to personality influences, regardless of the IHE press.

   By regrouping the same data, showing the number of patterns obtained by relating each personality measure to each of the four press dimensions, we get a counterbalancing picture. Thus, the second way in which the data are presented indicates how often one gets each type of pattern when a particular personality measure is compared with all four environmental press measures. In this case, the frequencies indicate how often, for example, "Esthetic" values are related to the criterion measures regardless of whether the press is IHE, W, SI, or PG.

8. Exact probabilities are available for the number of times each of these patterns might occur by chance for a given objective. For example, the "+" pattern should occur by chance 1/14 of the time once, 1/28 of the time twice, etc. Thus, the probabilities that the same pattern would occur by chance for a given scale when compared with other scales become smaller and smaller as the number of instances of the comparisons increases. Consequently, we would be somewhat surer that the IHE press was positively related to greater sense of progress on Objective 1 if the "+" pattern occurred across all six A-V-L scales than if it only occurred with one scale. The exact probabilities are as follows:

Probabilities for Patterns Occurring by Chance

a. Where there are three totally consistent patterns:
   If there are 4 comparisons $p = .032$
   If there are 5 comparisons $p = .04$
   If there are 6 comparisons $p = .048$

b. Where there are four totally consistent patterns:
   If there are 4 comparisons $p = .018$
   If there are 5 comparisons $p = .022$
   If there are 6 comparisons $p = .027$

c. Where there are five totally consistent patterns:
   If there are 5 comparisons $p = .014$
   If there are 6 comparisons $p = .017$

d. Where there are six totally consistent patterns:
   If there are 6 comparisons $p = .012$

These probabilities can be used to test specific hypotheses about the relation of press or personality to the sense of progress toward objectives. The null hypothesis in each case would be that all patterns occur by chance. A "press" prediction could be stated as: the rated sense of progress toward Objective 1 will be above the mean a significant number of times among those groups which have an IHE score above the college mean. A "personality" prediction might be that: the rated sense of progress toward Objective 5 will be higher among those respondents who have higher scores than the college mean on the A-V-L Social scale.

These predictions can be statistically tested by using the probabilities of the number of times the patterns would occur by chance. An arbitrary level of three occurrences may be chosen, as being statistically adequate. (This is approximately equivalent to a .02 level one-tailed test or a .05 level two-tailed test.) This mode of analysis is similar to an exact probability sign test.

9. In interpreting the tables one other baseline has been used: the probability that any one of the patterns could occur 1/14 of the time. Since these are four "totally consistent" patterns, these could occur in sum 4/14 of the time. Thus, any one pattern could occur 7+ percent of the time, and all four patterns could occur 29 percent of the time. When the obtained frequencies are substantially larger than these, one can be sure that some nonchance relationship exists.

REFERENCES

Best, Sheila Anne. *The Relationship Between the College Characteristics Index and Other Measures of the College Environment*. Syracuse, New York: Syracuse University, Master of Arts in Education Thesis, 1962.

Dressel, Paul, and Mayhew, Lewis. *General Education: Explorations in Evaluation*. Washington, D.C.: American Council on Education, 1954.

Eckert, Ruth. *Outcomes of General Education*. Minneapolis: University of Minnesota Press, 1943.

Haggerty, Melvin E. "The Effective College Curriculum." Chapter 1 in *The Effective General College Curriculum as Revealed by Examinations*. A report of the Committee on Educational Research of the University of Minnesota. Minneapolis: University of Minnesota Press, 1937.

Jacob, Philip. *Changing Values in College*. New Haven, Connecticut: Hazen Foundation, 1956.

Lashley, Karl S. *Brain Mechanisms and Intelligence*. Chicago: University of Chicago Press, 1929.

Learned, William S., and Wood, Ben D. *The Student and His Knowledge*. New York: Carnegie Foundation for the Advancement of Teaching, 1938.

Murray, Henry A. *Explorations in Personality*. New York: Oxford University Press, 1938.

Newcomb, Theodore M. *Personality and Social Change*. New York: Dryden, 1943.

Pace, C. Robert. "Five College Environments," *College Board Review*, 1960, 41, 24-28.

Pace, C. Robert. *College and University Environment Scales*. Princeton: Educational Testing Service, 1962.

Pace, C. Robert. *College and University Environment Scales: Technical Manual*. Princeton: Educational Testing Service, 1963.

Pace, C. Robert, and Stern, George G. *College Characteristics Index, Form 457*. Syracuse, New York: Syracuse University Psychological Research Center, 1957.

Pace, C. Robert, and Stern, George G. *A Criterion Study of College Environment*. Syracuse, New York: Syracuse University Research Institute, 1958.

Pace, C. Robert, and Stern, George G. "An Approach to the Measurement of Psychological Characteristics of College Environments," *Journal of Educational Psychology*, 1958, 49, 269-297.

Plant, Walter T. *Personality Changes Associated with a College Education*. U. S. Office of Education, Coöperative Research Branch Project 348 (SAE 7666), 1963.

Saunders, David R. *A Factor Analytic Study of the AI and the CCI*. Princeton: Educational Testing Service, 1962.

Stern, George G. "Student Values and Their Relationship to the College Environment." Pages 67-104 in *Research on College Students*, Sprague, Hall T. (Editor). Boulder, Colorado: Western Interstate Commission for Higher Education, 1960.

Stern, George G. "Characteristics of the Intellectual Climate in College Environments," *Harvard Educational Review*, 1963, 33: 5-41.

Stern, George G., Stein, Morris I., and Bloom, Benjamin S. *Methods in Personality Assessment*. Glencoe, Illinois: Free Press, 1956.

Thistlethwaite, Donald L. "College Press and Student Achievement," *Journal of Educational Psychology*, 1959, 50, 183-191.